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Original Contributions.

THE IDEAL LOWER DENTURE IN DIFFICULT CASES.

By J. D. Patterson, D.D.S., Kansas City, Mo. Read before the Missouri State Dental Association, at St. Louis, July 5-8, 1898.

It is often crudely estimated that when the various operations in dentistry are performed faultlessly their success is assured. While this may be largely true and a good rule to work by, it is not entirely correct, and this is especially so in regard to obtaining a satisfactory result while fitting lower plates to the edentulous jaw.

In the work of plate-making there are certain broad principles to be observed in all cases. First, the plate must rest with even pressure upon the mucous membrane it covers, and if such surfaces present areas of soft and hard resistance, then the plate in relation to those tissues must exert a compensating pressure. The soft tissue must give until an even plane of resistance is established, without which the plate will not adhere, will rock and will unduly press and irritate at points. I will not describe here the various methods of securing success in this cardinal principle, but merely mention it.

The second important feature is that of properly placing the teeth to secure natural and anatomical articulation. These two broad principles observed, as well as many other minor and less difficult problems solved, we may expect the best results in a large majority of cases.

To this statement there are exceptions, and it is one of these classes of difficult cases I now direct your attention—the edentulous lower jaw, where the once prominent ridge has been resorbed through disease, through natural senile recession, through absence of plates, or by the wearing of ill-fitting or non-aseptic plates. Here we are confronted with a situation in which, although we observe all basal principles in plate construction and every minor point usually taught, we find the denture so unstable and easily movable that it is anything but a pride to the operator or a comfort to the wearer.

A variety of contrivances to obviate this difficulty, spiral springs,

and a variety of suction chambers or channels, patented and unpatented, have been devised to meet the demand and delude the hopeful, as they certainly have the writer in past years. The springs, in my opinion, are hardly worth considering; they are ineffective and also intolerable because of the continual pressure and difficulty in cleansing. The numerous little suction points or deeper channels are sure to produce irritation at last, accompanied by greater absorption. On account of such irritation they are usually inapplicable because of the surface on which the plate must rest being so narrow, on account of the encroachment of muscular tissue, that they cannot be placed.

A solution of the difficulty in these cases is to supply, as well as a perfectly fitting plate, a heavy one, and the object of this paper is to recommend to you the very heaviest material made for that purpose, namely, Watts' "Metal." The use of heavy plates to utilize the force of gravity in the retention of lower dentures is nothing new, but in practice—save by employing weighted rubber—it is very little used. In conversation with the managers of dental depots I find that a fusible alloy is used in probably less than 1 per cent of cases where my experience proves it to be indicated.

The chief objection which is urged against the use of this material is that the muscles of the lower jaw soon tire of the superimposed weight. This, however, has not been my experience. To settle the question for myself I found in a patient an opportunity to test this matter and proceeded to experiment, with the result that in no case did I find the weight an objection, if the plate did not weigh over fifty dwt. The ordinary plate made of Watts' metal weighs about thirty-four dwt.; the same of Weston's metal weighs twenty-six dwt; of weighted rubber, twenty dwt., and of ordinary rubber, ten dwt. I found that the additional weight of Watts' metal gave a decided advantage in the retention of the plate, and the experiments all went to show that a plate weighing between 35 and 40 dwt. never tires the jaw, and affords a comfort and satisfaction not attained by materials of less weight in difficult cases.

Another objection to the fusible plate is that the metal will not retain its color and will produce a disagreeable taste. These features I have found in fusible alloy made by the dentist himself, but have not observed them in Watts' metal (the formula is not known precisely, but is principally of tin, lead and bismuth, as are all alloys of this class). In the dentures I have made of Watts' metal there

has been no oxidation after fifteen years' use, and other dentists have confirmed this.

The most frequent objection is the difficulty in obtaining a good result, the claim being made that the metal will not flow in every point of the mould. I have gone through this experience but now find no difficulty in securing a perfect cast from the mould. I use for model and investment the usual plaster, sand and asbestos of soldering investment, with the addition of a small amount of whiting to render the surface smooth, following the directions accompanying the metal, with the addition of pure beeswax as a flux. Before I used the beeswax as a flux failures were common, and I therefore give you this plan, which has not been before recommended, and am confident that it will insure good results. The flux must not be used indiscriminately or unevenly, but as follows: After carefully removing every particle of base plate, heat the case and apply pure melted beeswax with a hot pencil brush wherever there is doubt of the alloy following; just a smear of the wax will do the work, too much of a coating will result in failure.

When this is done and the case is clamped, joints luted, heated and dried until moisture will not condense on a mirror held before the pouring gates, the case is ready for pouring. Do not pour while the flask is very hot, but allow it to partially cool; do not overheat the metal, but pour rapidly just so soon as thoroughly melted.

I shall be pleased to give any practical instruction to those who have had difficulty in doing this work, and I can cordially recommend this style of denture because it is strong, stays in place, does not tarnish, is easily constructed, and reasonable in cost.

I quite agree that reinforced gold plates with rubber attachment will give the necessary weight, and a more acceptable and handsomer result is obtained; but the great majority of patients wearing full lower dentures are unable to pay the fees necessary for gold.

Discussion. Dr. W. M. Bartlett: This is a very good class of work in cases with flat ridges, but it is always liable to have bubbles. I cannot approve of any work not easily repaired, and this cannot be; the only way we can repair it is by the use of easy flowing solders or by a vulcanized joint, and all such work tarnishes. I much prefer a gold base or a continuous-gum plate in cases of this kind, and the work can be done with both.

Dr. J. H. Kennerly: During the last few years I have made

many of these plates and they give entire satisfaction. If care is taken in polishing the plate in the first place it may be worn for years without tarnishing.

Dr. Wm. Conrad: Make the repairs on these plates with rubber, and it is just as easy to do as with rubber plates. The only objection which I have to the use of any heavy plate is that there seems to be an enormous amount of resorption of bone process and considerable softening of the tissues themselves.

Dr. H. Prinz: Some time ago I made a number of analyses of the various metals that are used for lower plates with the following results: Watts' and Weston's metals are alloys largely composed of tin and silver, to which a small amount of bismuth is added to reduce the melting point. The saline fluids in the mouth when acting on the plates may form chlorid of tin, as tin is very easily attacked by chlorin. This chlorid of tin is a strong antiseptic agent, which will exert its good influence upon the mucous linings of the oral cavity. No toxic salts are formed for this reason, and because of its weight and adaptation a cast plate is preferable for lower dentures. Furthermore, it is easily kept clean by the patient. Broken plates are repaired by using the same metal as solder with the soldering-iron and employing a solution of chlorid of zinc as a flux. For strengthening partial lower dentures a piece of german silver or tinners' steel wire should be used. Have the cast as dry as possible and nearly the same temperature as the molten metal.

Dr. Patterson, closing the discussion: I know that this method has been discarded, but I think unwisely, as it has great possibilities in these particular cases. Some require weight to hold the plate in place so that the patient can properly masticate food. These plates can be easily repaired with a blow-pipe and a flux of beeswax; the latter article should be pure and have no paraffin in it. Tissues do very well under these plates, and in many cases the absorption has extended to the bone proper before plate is put in.

PRESIDENT'S ADDRESS.

By Frank Slater, D.D.S., Rich Hill, Mo. Delivered before the Missouri State Dental Association, at St. Louis, July 5–8, 1898.

Our association is again in session with the same motive in the hearts of its members which prompted its organization a third of a century ago—the advancement of dentistry. The interchange of

ideas and the illustration of individual methods of practice, as exemplified at our meetings, have been the means of keeping the active practitioner ever alert to give his patrons the advantage of the best methods.

Dental associations have been the means of placing dentistry on a firm foundation among the learned professions, by compelling the recognition of the rights and privileges of dentists by the state governments, causing them to enact wholesome laws regulating the practice of dentistry, by protecting the unsuspecting public, and, through our state examining board, by requiring proper technical knowledge on the part of the practitioner. Last but not least is the recognition by our government, a bill having been introduced for the increase of the medical corps of the United States army by a dental adjunct.

We must not rest on our laurels, however, but seek others. The dental colleges have been largely the children of the various associations and are now relieving them to a great extent of the work heretofore done by these bodies, and it will be necessary for us to adopt new lines of work, perhaps look more to the social features and towards increasing our membership.

This fact is worthy our serious consideration—with over a thousand dentists in the state, only one hundred and fifty are members of our association. There is undoubtedly a cause for this indifference on the part of the large majority, and perhaps many object to our code. There are many present who would not approve of any modification of it as it now stands, and there are always two sides to every question, but the advantages gained by a liberal revision of it would counterbalance any evil which might follow. It is seldom that a meeting of this association is not marred by the trial of one of its members for violation of the code. Professionally this is a reflection on the integrity of the accused, but such is not shared by the public and often excites indignation among his friends and neighbors, for they cannot see that any moral law has been violated.

The education of the public along the lines of dentistry requires our serious consideration, for the sublime ignorance of all pertaining to it on the part of many otherwise well-informed people is simply appalling. The code as it now stands is a barrier to any effort in this direction, prohibiting the discussion or reporting of a case,

even of unusual interest, in any of our newspapers, although we may spread it abroad by word of mouth. I feel that there should be more liberty allowed the profession and that it would be a step in the right direction and would redound to the credit of the fraternity and be a lasting benefit to mankind. I invite discussion on this point.

Discussion. Dr. A. J. Prosser: I believe that the men now coming into the profession will give us better material than we have had in years past, and the code can be raised instead of lowered.

Dr. S. C. A. Rubey: Professionally, ethics are nothing more than personal honesty, integrity and self-respect. More liberality might be shown, but my idea would be to make that change in the interpretation rather than in the literal wording itself. Attention can and should be called to special cases and there is nothing in the code to prevent it.

Dr. J. R. Megraw: More attention should be paid to the social feature of our meetings, which is too often neglected. The new men should be made welcome and invited to participate.

Dr. J. A. Price: The present code should not be disturbed, and if it is amended we cannot expect to have any membership in the National Association.

Dr. J. N. Crouse: The general code of ethics is very similar in all societies and is copied from the old American Association. The code, in my opinion, should not be changed; but it must be remembered that a set of rules will never make a professional man. If the man is right at heart he does not need any code of ethics, for he will neither disparage his practitioners nor cheat the community.

Dr. Frank Slater: I do not think it is unprofessional to state that we do a special line of work, or, after we have cured a case of unusual interest, to let it be known that these difficulties can be overcome.

Dr. A. J. Prosser: I cannot agree with what our president has just said, for many might make specialties of the most trivial things, and you would soon have every man in the profession advertising.

Dr. H. H. Sullivan: We are trying to educate the public that the better class of men in the profession do not advertise in any way whatever, and if we advertise specialties, how will laymen distinguish between the two classes?

TOBACCO AND ITS EFFECT ON THE CONTENTS OF THE ORAL CAVITY.

By John G. Harper, D.D.S., St. Louis. Read before the Missouri State Dental Association, at St. Louis, July 5–8, 1898.

One of the first questions propounded to a dentist by a tobacco-user is, "Does tobacco injure the teeth?" It was the presentation of this question that led me to observe the mouths of tobacco-users and note the condition found in the oral cavity.

Let us go back a few hundred years and see what can be found regarding the beginning of the use of the weed and some of the literature regarding the same. "Tobacco consists of the leaves of several species of *Nicotiana* (*nat. ord. Solanacea*), variously prepared for use as a narcotic. While it is principally prepared for smoking, a large amount is also prepared for chewing, and to a more limited extent it is taken in the form of snuff. Under one or other of these forms the use of tobacco is more widely spread than any other narcotic or stimulant."

History: Although the fact has been controverted, there cannot be a doubt that the knowledge of tobacco and its uses came to the rest of the world from America. In November, 1492, a party sent out by Columbus from the vessels of his first expedition to explore the island of Cuba, brought back the information that they had seen people who carried a lighted firebrand to kindle fire, and perfumed themselves with certain herbs which they carried along with them. The habit of snuff-taking was observed and described by Ramon Pane, a Franciscan who accompanied Columbus on his second voyage (1494–6), and the practice of tobacco-chewing was first seen by the Spaniards on the coast of South America in 1502. As the continent of America was opened up and explored it became evident that the consumption of tobacco, especially by smoking, was an universal and immemorial usage, in many cases bound up with the most significant and solemn tribal ceremonies.

The term "tobacco" appears not to have been a commonly used original name for the plant; and it has come to us from a peculiar instrument used for inhaling its smoke by the inhabitants of Hispaniola (San Domingo). This instrument, described by Oviedo (*Historia de las Indias Occidentales*, Salamanca, 1535), consisted of a small hollow tube shaped like a Y, the two points of which

being inserted in the nose of the smoker, the other end was held in the smoke of burning tobacco, and thus the fumes were inhaled. This apparatus the natives called "tabaco;" but it must be said that the smoking pipe of the continental tribes was entirely different from the imperfect tabaco of the Caribees. Benzoni, on the other hand, whose travels in America (1542–56) were published in 1565, says that the Mexican name of the herb was "tobacco."

The tobacco plant itself was first brought to Europe in 1558 by Francisco Fernandes, a physician who had been sent by Philip II. of Spain to investigate the products of Mexico. By the French ambassador to Portugal, Jean Nicot, seeds were sent from the peninsula to the queen, Catherine de Medici. The services rendered by Nicot in spreading a knowledge of the plant have been commemorated in the scientific name of Nicotiana. At first the plant was supposed to possess almost miraculous healing powers and was designated "herba panacea," "herba santa," "sana sancta Indorum;" "divine tobacco" it is called by Spencer, and "our holy herb nicotian" by William Lilly. While the plant came to Europe through Spain, the habit of smoking it was initiated and spread through English example. Ralph Lane, the first governor of Virginia, and Sir Francis Drake brought with them in 1586 from the first American possession of the English crown the implements and materials of tobacco smoking, which they handed over to Sir Walter Raleigh. Lane is credited with being the first English smoker, and through the influence and example of the illustrious Raleigh, who "took a pipe of tobacco a little before he went to the scaffolde," the habit became rooted among Elizabethan courtiers.

During the seventeenth century the indulgence in tobacco spread with marvellous rapidity through all nations, and that in the face of the most resolute opposition of statesmen and priests, the "counter-blaste" of a great monarch, penal enactments of the most severe description, the knout, excommunication and capital punishment.

Physiological Effects: The influence of tobacco on health and morals has ever since its introduction into Europe been a fruitful subject of controversy. On all grounds except medicine it met the most uncompromising opposition when it first became known; but it was precisely the expectations entertained regarding its medicinal virtues which were completely disappointed. Burton, in the "Anatomy of Melancholy," gives strong impression to the two views:

"Tobacco, divine, rare, superexcellent tobacco, which goes far beyond all the panaceas, potable gold and philosopher's stones, is a sovereign remedy in all diseases. A good vomit I confess, a virtuous herb, if it be well qualified, opportunely taken, and medicinally used; but it is commonly abused by most men, which take it as tinkers do ale; 'tis a plague, a mischief, a violent purge of goods, lands, health, hellish, devilish, and damned tobacco, the ruin and overthrow of body and soul." Burton's meaning that tobacco in moderation is a good thing, while its excessive use causes many physical and other evils, has many sympathizers, but the difficulty is to define moderation and excess.

Among modern authorities, Dr. Jonathan Pereira says, "I am not acquainted with any well-ascertained ill effects resulting from the habitual practice of smoking." Similarly Sir Robert Christison concludes, "In many individuals who use it habitually the smoke has an extraordinary power in removing exhaustion, listlessness and restlessness, especially when brought on by bodily or mental fatigue, and this property is the basis of its general use as an article of luxury." Dr. E. A. Parkes sums up his observation thus: "I confess myself quite uncertain. I can find nothing like good evidence in books; too often a foregone conclusion, without any evidence to back it, is given. I think we must decidedly admit injury from excess; from moderate use I can see no harm, except it be in youth."

On the other hand it is asserted by opponents of tobacco, and by the anti-tobacco societies, that the habitual use of this narcotic leads, especially in the young, to decrease of bodily and mental vigor, and especially produces symptoms of anemia, palpitation, intermittent pulse, and other affections of the heart and circulation.

It is an admitted fact that a disease of the vision—tobacco amblyopia—is contracted by smokers, and it is not uncommon among those using strong heavy preparations, such as black twist. Allowing that such incidental evils may arise from comparatively moderate indulgence in tobacco, they are all as nothing compared to the vast aggregate of gentle exhilaration, soothing and social comfort extracted from the Virginia weed.—(*Encyclopedia Brit.*)

The Use of Tobacco by Boys: "The use of tobacco by growing boys is so generally recognized as pernicious that it is extraordinary that more energetic measures are not urged upon those having the

care of youth to prevent the habit. Already it has been prohibited in the U. S. Naval Academy at Annapolis, in the U. S. Military Academy at West Point, in the Phillips Exeter Academy, New Hampshire, in the Lawrenceville School, New Jersey, and in various other enlightened educational institutions. This was not the result of prejudice or hobbyism. If any set of men are free from these vices of learning it is the naval surgeons; and it was especially from them, and particularly from Dr. A. L. Gihon, U.S.N., that this attack on the weed began. The indictment laid against it charged: 1. That it leads to impaired nutrition of the nerve centers. 2. That it is a fertile cause of neuralgia, vertigo and indigestion. 3. That it irritates the mouth and throat and thus destroys the purity of the voice. 4. That by excitation of the optic nerve it produces amaurosis and other defects of the vision. 5. That it causes a tremulous hand and an intermittent pulse. 6. That one of its conspicuous effects is to develop irritability of the heart. 7. That it retards the cell change on which the development of the adolescent depends. This is a formidable bill of particulars, and yet each of these charges is preferred by the best modern authority, and what is more, each is substantiated by an abundance of clinical evidence.

Testimony is also adduced from the class records of schools and colleges, which indicate very positively that the effect of tobacco on the mental faculties is deteriorating. The best scholars are not tobacco users; non-smokers take the highest rank in every grade; and whether we look at the exceptionally brilliant students, or compare the average of those who refrain from tobacco, the result shows the same.—(*Medical and Surgical Reporter*, 1882.)

"Nicotin and Its Action Upon the Teeth," by David Hepburn. Read before the Odontological Society of Great Britain, 1882. "From the slight observation I have given to this subject I am led to believe that the direct action of nicotin upon the teeth is decidedly beneficial. The alkilinity of the smoke must necessarily neutralize any acid secretion which may be present in the oral cavity, and the antiseptic property of the nicotin tends to arrest any putrifactive changes which may be going on in carious cavities. But in addition to these we have another agent at work in the carbon with which the tobacco-smoke is impregnated, and I am inclined to believe that the dark deposit which we find on the teeth of some habitual smokers is largely composed of this ingredient. It is this

carbon which is deposited upon the back part of the throat and lining membrane of the bronchial tubes, and with whatever disastrous effects it may act in these situations, from what we know of its wonderful antiseptic properties I think we are justified in concluding that its action upon the teeth must be of a beneficial nature. Moreover we find this deposit takes place exactly in those positions where caries is most likely to arise, and on those surfaces of the teeth which escape the ordinary cleansing action of the brush.

We find it interstitially, in all minute depressions, and filling the fissures on coronal surfaces. It may be removed with scaling instruments from the surface of the enamel, but where it is deposited on dentin this structure becomes impregnated and stained. Indeed it is only where the enamel is faulty and there is access to the dentin that any true discoloration of the tooth takes place; but it is remarkable how the stain will penetrate through even minute cracks, provided that the necessary attention to cleanliness be not exercised. The staining power of tobacco oil may be seen when a deposit has taken place on the porous surface of tartar collected on the posterior surface of inferior incisors. In this situation a shiny ebony appearance is occasionally produced.

That tobacco is capable of allaying to some extent the pain of toothache is, I think, true; its effect being due not only to its narcotizing power but also to its direct action upon the exposed pulp, and I am inclined to attribute in great measure the fact of the comparatively rare occurrence of toothache amongst sailors to their habit of chewing. I have been struck, in the case of one or two confirmed smokers of an exaggerated type who have come under my notice, by the apparent tendency which exists towards the gradual production of complete necrosis of carious teeth, and the various stages of the death of the pulp and death of the periosteum taking place without pain or discomfort to the patient. This condition may of course be brought about by a variety of influences; but in these special cases I am inclined to think that the presence of nicotin in the mouth has acted powerfully. Hoping to hear your experiences on this subject of nicotin and its effects on the teeth, I leave it in your hands."

The following paper was written and published in 1882: "The Teeth Injured by the Use of Tobacco." By John G. Harper, D.D.S., St. Louis, Mo. "I was taught that the use of tobacco in

any form was not injurious to the teeth, and in all of the literature of the profession I have found nothing alluding to what I desire to present to the profession, namely, the evil effects upon the teeth caused by the constant use of tobacco. My attention was first drawn to this evil just one year ago this month, when I was filling the teeth of a patient who has for years been in the habit of smoking and chewing a great deal of tobacco.

The injurious effects are not very noticeable until the person has been using the weed for about fifteen years, but the use of the pipe to excess will show its injurious effects in less time. Tobacco-chewing is the most injurious, as the tobacco acts as an irritant in two ways, mechanically and by its properties. Mechanically, by particles of the tobacco being forced between the gums and teeth.

We have proofs of the irritable effects of tobacco in snuff. The direct effect of using tobacco is the recession of the gums of all the teeth, but more especially those on the side of the mouth used mostly in chewing the tobacco. The sequel to this recession may cause the loss of one or more teeth by a diseased condition of the pulp, resulting from its being irritated by having the neck of the tooth and root exposed to thermal changes in food and in the air we breathe. Exostosis and calcification may result.

Tobacco-chewers' teeth wear away on the grinding surface rapidly, caused by the gritty substance naturally entering into the tobacco. The gums recede and are red and congested, and underneath the gum a narrow line of dark tartar is nearly always present, and particles may be found still further towards the apex of the tooth. I have given these few thoughts, hoping that others may observe and point out this evil to the tobacco user."

Clinical observation since writing the above has confirmed what is set forth therein, and I am now convinced that tobacco chewing does cause decay of the teeth, especially at the gingival portion of the teeth in the locality in which the cud is held; this is due to the formation of acids produced by the sugar or liquorice used to flavor the tobacco.

I hope members of the profession will give this problem attention, so that they may give a correct answer to the question, "Does the use of tobacco injure the teeth?"

Discussion.—A Member: As a rule the teeth of tobacco-users are in better condition than those of non-users, since the former have an

abundant flow of saliva in the mouth and generally brush their teeth after smoking or chewing. I do not believe that it causes the gums to recede, but even so, the teeth are generally sound.

Dr. J. F. McWilliams: Granting that the use of tobacco has a bad effect on the entire nervous system, I do not believe that it causes decay and mechanical abrasion of the teeth, for these latter are just as bad in non-users as in users.

Dr. J. N. Crouse: While I am opposed to the habit, from careful observation I think there are evidences that the use of tobacco preserves the teeth. Tobacco-users are more apt to brush their teeth than non-users; the flow of saliva is increased and the teeth are kept in use.

Dr. F. M. Fulkerson: I believe you will find more cases of arrested decay in the months of tobacco-users than in non-users.

Dr. H. H. Sullivan: When I stopped chewing tobacco in 1890 I had eight or ten very small cavities in the molars and bicuspids. Since that time every one of them has eaten through the enamel. Is that caused by the non-use of tobacco, or would the same have resulted anyway?

Dr. J. F. McWilliams: I have a patient now who has a set of teeth which are worn perfectly square. On the side on which he has chewed tobacco they have receded way below the gums and all his teeth are very loose.

Dr. J. G. Harper, closing discussion: When asked some years ago, I replied that the use of tobacco did not injure the teeth themselves, but that by driving back the gums the teeth were loosened. However, my observation has convinced me that it does cause decay in many cases. If a person smokes a very strong pipe the gums will gradually recede up to the apex, but on the buccal and labial surfaces there will be but little recession. Perhaps incipient decay may be arrested by tobacco, but not to any great extent. Toothache and neglect of teeth is one reason why people use tobacco.

PYORRHEA ALVEOLARIS AND ITS TREATMENT.

By R. L. Ready, D.D.S., Liberty. Read before the Missouri State Dental Association, at St. Louis, July 5–8, 1898.

Pyorrhea is a disease which is usually treated carelessly, for the simple reason that the fee for treatment is small; and as a cure is doubtful the dentist is backward about charging what the treatment

is worth. However, as professional men we should not shun such cases because there is no money in them, for there is knowledge to be gained, and where a cure is effected, the everlasting good-will of our patient.

Since I have been interested in this common disease I have made a study of each case, and have always found there were some traces of uric acid where there was an abundance of tartar on the teeth. Either the patient had kidney trouble or rheumatism, and I have come to believe that this uric condition (or uric acid in the blood) acts with the saliva and causes a greater formation of salivary calculus. We know the saliva to be alkaline, and tartar is of the same chemical composition as the deposit found in a tea-kettle which has boiled well-water. A clean tooth kept in a kettle for months will not have any lime rock on it when taken out. Is it therefore not unreasonable to believe tartar is due to other conditions than alkaline?

For the last year I have adopted a constitutional treatment and a mouth-wash as well for effecting a complete cure in each case within three or four weeks. Some cases were so bad that when the tartar was removed the teeth had to be laced with silk ligatures to hold them in position, and the gums and process were entirely destroyed.

My treatment is to clean the affected teeth thoroughly with a sharp scaler and tartar hooks, then polish the roots with moose-hide disks. After the tartar has been thoroughly removed I syringe out the pockets with a warm 50 per cent solution of listerine. I repeat the syringing under the gums every day if possible and give the patient a bottle of 50 per cent listerine to wash out the mouth three or four times daily. For the elimination of uric acid I give a tablet of lithia in a glass of water three times each day, and when I have given it to patients from ten days to two weeks the tartar does not form on the teeth perceptibly afterwards. Whether uric acid has anything to do with the formation of tartar or not the lithia treatment is beneficial. I have never failed to cure a case of pyorrhea with this treatment, and while you may not agree with my ideas, I hope that you will give the method a trial.

Discussion. Dr. Wm. Conrad: The reason that so many prominent men say there is no cure for pyorrhea is because it does not

pay. I believe this disease capable of cure in many cases and of radical improvement in all. Formerly such a statement might have been considered a vain boast, but things now common practice were a short time ago considered impossible. Pyorrhea is a constitutional disease with a local manifestation; remove the teeth and the local manifestation will disappear. I consider it a constitutional disease because it is primarily a nervous disorder, having its origin in the brain or some nervous center acting upon the vaso-motor nervous system, which controls the nutrition of the teeth in their formation. The local side you see every day; the gums become diseased, the teeth loosen, pus forms, and the teeth are lost. Relieve the local manifestations, have the patient harden the gums by brushing, occasionally using precipitated chalk, but principally a 2 per cent solution of carbolic acid. My order is to brush every surface of the teeth and gums at least once every day with powder and carbolic acid solution. The dentist should apply a 10 per cent solution of nitrate of silver two or three times a week; and cocain, camphophenique and iodin are good where there is much pain. The pulps of all affected teeth should be devitalized, for they are always more or less calcified, causing irritation. Do not be in too much of a hurry to fill the canals, for rest is often good. When the pulps are devitalized the teeth will settle back in the process almost immediately. Remove all deposits thoroughly, but not until after the pulps are devitalized. Leave the process alone, for burring, cutting and scraping are seldom required. While Dr. Ready has evidently confused the formation of tartar with pyorrhea, I consider his treatment good.

THE IDEAL BRIDGE OF TO-DAY AND THE NEXT STEP TO IMPROVE IT—SECOND PAPER.

By F. F. Fletcher, D.D.S., St. Louis. Read before the Missouri State Dental Association, at St. Louis, July 5–8, 1898.

A year ago I read a paper before this society on "The Ideal Bridge of To-day and the Next Step to Improve It," which when crystallized presents these few thoughts for your consideration: For bridge showing but little or none, especially on the inferior maxilla, the all-gold or all-porcelain, having a contact point on the top of the ridge, and covering as little soft tissue as possible, seemed to be nearest the ideal, while porcelain would hold full sway where

visible. The improvement was not to be in the superstructure, but in the foundation. The claim was made that the only ideal bridge rested on parallel piers, and as this class of cases was the exception, our attention must be directed to this point. It was argued that the average bridge-worker of to-day has by careful attention and close application become proficient and even expert in the use of all materials used in bridge-work. He will fit difficult bands, secure almost perfect articulation in all cases, and so unite the various pieces with high-grade solders that when he steps from the laboratory with the case ready for insertion, it is, from an artisan's standpoint, a beautiful, strong and perfect piece of work. Thus his education on the superstructure has been superb, but the mechanical principles involved in the construction of the piers to support the handsome and useful partial denture have been most sorrowfully neglected and ignored. System after system has been devised for making the bridge, securing articulation, etc., until perfection seems to be almost reached in this part of the work; but whoever heard of a system to place the abutments in proper position to receive and permanently support these beautiful and useful structures? It seems to me we have scarcely gained a new idea on this subject since the first bridge was placed in position, and what has been the result? A very large per cent of the bridges inserted are removed in less than two years in good condition, simply because the foundation was rotten. It was suggested that we turn our attention to orthodontia, restore these piers to their original positions, thus bringing them back to a normal occlusion and parallel, in which position it is easy to make a bridge that will slip into place when finished without changing the forms of the bands, and consequently their fit; acting at the same time in the two-fold capacity of restoring the lost teeth and furnishing a permanent retaining appliance for the piers.

This in brief is the essence of Paper No. 1. Since then a year has flown—one full of the cares incident to a professional life. Most of us, I trust, have had an expanding practice. Our former patrons who still cling to us have had their confidence strengthened by our continued success with them. Thus by our integrity and ability have we not only retained them but attracted their associates and friends to us, thereby unconsciously gaining friends and practice, making us welcome and respected in our various communities.

Are we entitled to the growing confidence reposed in us? Have we in the past year added to our stock of professional knowledge in proportion to the demands upon us? Let us by careful work, study and personal investigation always be able to answer that we have advanced, be it ever so little. For when once a man rests upon his oars the time is indeed short until he commences to drift, slowly at first, but soon more rapidly adown the stream he struggled so hard to ascend. Some one says, "I have never advanced so rapidly as during the past year. I have been so busy I could not find time to read the journals or attend my society properly, and my cash balance is the largest during my entire practice." This brother may be lulling himself into false security. It is often the busiest man who is retrograding the most rapidly. He has not the time to prepare cavities, finish fillings, etc., according to the most approved methods; they are too slow for him. Why, the veriest charlatan in our midst is often one of the busiest men, so this argument falls of its own weight. His other deductions are equally fallacious. Neglecting one's society, failure to read the literature of our profession and to mingle with its members are to my mind some of the surest symptoms that a man has reached his zenith and is now drifting. No matter how hard one may work in seclusion, his labors will not be crowned by the success he would have obtained had he called to his aid the forces already mentioned, for we must all admit that the resources contained within the individual are not equal to those of his brethren combined.

The recluse is soon confined to a narrow rut, while his antipode expands and grows, ever reaching for a higher plane nor resting till life's fitful struggle ends. Many of the new inventions, methods and theories have not the merit when put to the practical test that their enthusiastic originators claim for them, but on account of this being true, we are not justified in condemning every new idea. To us, the rank and file, is left the work of testing all, and after careful investigation the duty of separating the wheat from the chaff.

When the first paper was presented, the chief arguments against the proposed improvement seemed to be that it was impracticable; that malposed molars could not be placed in their original positions; that our orthodontia specialists gave us no methods for accomplishing this seeming impossible task, and if we attempted this radical departure, the fees obtained would not be commensurate with the

time, trouble and expense incurred. Not a word was said in opposition to the principle involved. This is the only point to be decided —is the principle right or not? There seems to be but one answer. Were a civil engineer to attempt to erect a bridge on abutments that were not perpendicular and parallel with each other, he would be considered *non compos mentis*, promptly discharged and a competent man selected to build that foundation on correct mechanical principles, no matter how difficult or expensive the task might prove.

We as a profession are proud of our attainments in the field of letters and science, and justly so; while in mechanics we are even boastful, and our orthodontia specialists in their careful study of the subject have invented appliances that are marvels of ingenuity and wonders in exerting force against force for common good; proving by the simplicity of their appliances, coupled with their wonderful power and grand results, that they are mechanically correct. But in looking through the wreckage and ruin of bridgework in the past ten years, searching for the mechanical principle whose violation caused the downfall of so many beautiful and artistic superstructures, we dig down among the mass of debris, corruption, misfits and ruins until the abutments are discovered. By clearing away the barnacles and refuse always found in and about such catchbasins, the piers at last come into full view, and standing at different angles as they do, loom up before us as the most woeful caricature ever perpetrated upon a mechanical principle.

Let it be decided that the principle of parallel piers is correct, and I am willing to trust the inventive genius of our profession with doing the work. For more than a year have I noted the beautiful results of this system, under the guidance of our eminent specialist, Dr. Edward H. Angle, to whom I am so much indebted for assistance and encouragement along these lines. I have seen bicuspids and molars standing at all angles gradually assume their normal position in the arch, thus restoring normal occlusion, while the bridge permanently retained them. The anterior teeth are of course much less trouble and the irregularity can be corrected by anyone. There can now be no excuse for anyone inserting a bridge on anterior teeth that are not parallel, and when the first case is completed you will congratulate yourself on the artistic effect, as well as on the more accurate fit and consequent longevity and usefulness of the case. This will stimulate you to undertake putting posterior piers

in proper position. Do not attempt the most difficult at first, and failing, condemn the theory, but remember the adage "*Nulla excellentia sine labore*," and with full determination to conscientiously accomplish this work, pursue it intelligently and patiently. As a well-earned reward you will soon have the supreme satisfaction of seeing in your own office a beautiful piece of bridge-work, not only artistically and properly constructed, but one which will slip into place on these parallel piers without changing shape in the least, leaving the completed case fitting as accurately as did the bands when the impression was taken. Then can you proudly say, there rests a structure, similar to many I have made before, but the first one to fit and rest upon a reconstructed foundation, the original of which would have jeopardized any structure erected upon it.

Discussion. Dr. C. L. Hungerford: In cases of very frail roots, you will find that when they are well cleansed mechanically of the accretions which have collected on them they will be held together by bridge-work. All roots not parallel should be ground and every bit of enamel carved off at the cervical margin, so that the crown, instead of hugging the body of the tooth, will be cone-shaped, and then the harder you drive it the tighter it clings. Ordinary teeth have a more offensive odor than a well-adapted bridge, for there is more secretion and more foreign particles work into the interstices.

Dr. J. N. Crouse: I believe we put in more bridges than we should, because of the good fees incident thereto, and this is especially true of patients from forty-five years up, whose teeth are a little shaky. Applications for bridge-work come mostly from those who have had pyorrhea, and are the least permanent cases.

Dr. C. H. Darby: I can understand why a tooth should be devitalized before crowning when the piers are not parallel, but for a single crown I fail to see why it should be the universal practice to devitalize the tooth. I believe that many crowns will do better service and last longer with the pulp in the tooth than out.

THE INDIVIDUAL AND THE SOCIETY.

By J. R. Megraw, D.D.S., Fayette. Read before the Missouri State Dental Association, at St. Louis, July 5–8, 1898.

I shall consider the object of the dental society under four heads. First, Its use in the development of the science of dentistry. During the second century, Galen, a physician, wrote to some

extent upon the teeth, but from that time to the sixteenth century we find very little literature on the subject. At the latter date Rhazes, Albucasis and others made some mention of the human teeth, but to Eustachius we are indebted for the first correct description of their number, growth, different forms and varieties. In 1771 and 1778 John Hunter wrote his "Treatise on the Teeth," which laid the foundation of dentistry in England. In Germany and France dentistry had progressed equally with England. In 1636 was the first advent of dentistry in the United States, when three barber surgeons came to Boston with the Plymouth company. From that date until the beginning of the nineteenth century dentistry progressed rather slowly, but in 1839 *The American Journal of Dental Surgery* was first published; in February, 1840, the Maryland Legislature chartered the Baltimore College of Dental Surgery, the first in the world, and the following July the American Society of Dental Surgeons was organized through the untiring efforts of Dr. Horace H. Hayden, and from this began the true life of associated dental effort in America. So great has been the progress of the society movement that there exists to-day one or more in almost every state in the union, and the society has done more to advance the profession than all other agencies combined.

Second, Its use in regulating the practice of dentistry, legally and otherwise. Through the efforts of the Alabama State Dental Society the first law in the United States legalizing the practice of dentistry was enacted by the Alabama Legislature in 1841, and for twenty-seven years it stood alone. In 1868 the New York State Legislature passed the second dental law, which result was due to the efforts of the state society. After many years of hard work by members of the American and Southern Associations, a national dental library and museum have been established.

Third, Its personal benefits to its members. The dental society is and should be considered a post-graduate school, and in no way can a dentist better keep abreast of the times than by attending its meetings. Those who take the most interest are the ones who derive the greatest benefit. There are members who attend each year, yet never take an active part. The loss is not only theirs but ours, as many of them might be possessed of ideas which would bring forth other useful ideas from the rest of us. If upon receiving the program of the meeting each member would take time to read

up on the subjects to be discussed, the benefit to all would be much greater and the meetings of our society more instructive than they now are.

Fourth, Its maintenance of a code of professional ethics. The importance of a high standard of professional ethics is too well known to admit of discussion, and I will therefore say on the subject only that the dental society is the chief factor in establishing and maintaining the code.

BUCCAL ERUPTIONS OF MEASLES.—Measles can often be detected by an examination of the buccal mucous membrane.

STATURE STATISTICS.—The different countries of Europe vary greatly in the average stature of their people. The Scotch are the tallest, averaging 5 feet 10 inches on a level with the Polynesians and Armenians. At the other extreme are the southern Italians, French and Spaniards, all the shortest people, except the dwarf tribes of Africa. The average height in Ireland is 5 feet 9 inches; in England and Scandinavia, 5 feet 7 inches, in Wales, Germany and Denmark, 5 feet 6 inches; eastern France, 5 feet 5 inches; in Spain, Switzerland, northern and central Italy, 5 feet 4 inches; in Portugal and southern Italy, 5 feet 3 inches.—*Medical Record.*

ABSCESS EVACUATOR.—Here is a simple little cupping arrangement suggested by Dr. T. H. Hunter, years ago: Take one of Wood's patented polishing cups and plug the mandrel-hole with a piece of gutta-percha, which must not project on the inside of the cup. Then wet the inside of the cup and place it over the gum so as to cover the opening into the abscess. Gently press the cup flat upon the gum, and upon removing the finger the elasticity of the cup will cause sufficient suction to fill the cup with the contents of the abscess; repeated action will evacuate it. Medicaments placed in the tooth cavity may likewise be drawn through the sinus.—*Am. Dent. Weekly.*

NEW METHOD FOR OPERATING IN CHRONIC ANTRAL EMPYEMA.—Dr. Luc has proposed and described this method, which is in the main a combination of the Desault and Mikulicz operations. A wide opening is made into the sinus from the canine fossa, and the cavity curetted and cauterized with strong chlorid of zinc solution. An opening is then made from the sinus into the nasal cavity and a gauze drain introduced with a curved stilette. This makes it possible to disinfect the sinus from the nose and flush out the secretion. Afterward the mucous membrane over the opening of the canine fossa is sewed together, completely cutting off communication between the sinus and the mouth. After fourteen days the drain may be discontinued, but if necessary further washing out of the sinus from the nose can be carried out by means of a curved cannula. In three cases in which Luc had done this operation the opening from the canine fossa was closed in three days, and at the end of six weeks a complete cure had been effected.—*Monnatsschrift fur Ohrenheilkunde.*

Digests.

THE DIGNITY OF ADVERTISING. By H. C. Smith, Business Manager New Orleans Medical and Surgical Journal. There can be no dignity in any calling where payment is not demanded from those able to pay. A doctor who accepts an apology in payment of a first visit and makes another, when the patient is able to pay, lowers the dignity of his calling. He puts a cheap price on his services, and in a few years complains of lack of appreciation from the public. There must be a charge to those able to pay, and payment insisted upon, or else medicine and misery will die together.

There are doctors living in towns of five thousand, surrounded by rich agricultural lands, who do not collect 50 per cent of their bills, and dare not send a second one for fear of offending. It is the lack of dignity which produces this sad condition, and the doctor has only himself to blame. It may also be caused by the narrowing influence on a mind by continuing in only one line of thought, and no business ability. Too many physicians know a little medicine and nothing else. When a man of this class finds himself outstripped by a well educated, broadminded, successful medical brother, he ofttimes stoops to undignified methods and lowers his calling in the eyes of the public.

The most undignified and harmful thing a doctor of this class can do is to start a medical journal, not to disseminate medical knowledge but to down some one. He surrounds himself with a clique on a par with himself, and never stops to think of the vengeance of his confreres. This bombastic clique, whose editor is a Cook's tourist specialist, does not know the difference between a paid write-up and a scientific article, but that makes no difference—they have failed as practitioners of medicine—so start a journal, God save the mark! to fill a long-felt want and an early grave. Journals of this class are started every month, and some publishers extend the "glad hand," but it is with a sad heart I view their "maiden efforts," well knowing that Volume II will never appear.

This set have departments in their publication presided over by assumed specialists, who can diagnose a tumor a thousand miles away, and are ready to go night or day and remove it. Such an organ has no weight or influence among intelligent people. The

business management of this journal is turned over to the youngest man in the clique, because he has more time. The first thing he does is to trade his best space for a set of dishes (108 pieces, I believe, was the offer), because he needs them. This management does not pay the printer, so the long-felt want and the early grave are both filled after a few issues.

The most undignified, but still ethical, is the set who own a publication and run a sausage-mill medical college attachment, which grinds out graduates. The dean in one of these in a small city has over fifty operations for appendicitis in one year, and his neighbor, a very young man, over one hundred laparotomies. Where is the dignity of advertising such? If his more favored brother in larger cities operated in proportion, the human race would soon be devoid of much of its anatomy.

If publishers would only recognize the fact that all journals cannot be great, but might at least be honest, they would, in time, build a local support which would pay the printer and give their subscribers some value for their money. A journal that is not paid for can have no value, dignity, or influence.

In making a trip through Florida I saw in most of the doctors' offices a journal that has the largest circulation in America, and was told many times they never thought of paying for it. This is the journal that must be referred to in the Bible—Numbers xxiv: 14—which says: "I will advertise what these people will do to thy people in the latter days." This wonderful publication can diagnose cases by mail, and always recommends what the editor owns stock in or is advertised in his journal. Is it not a serious question, a vital one, what this journal will do to the people?

The journal that sells the top of its title-page, in my opinion has sold its birthright, and the one that accepts three dollars per month for the lower half of the front cover never had any. Some journals are so hard up for pap that they give from five to twenty journals for an article, and tell the writer he can send in the names of friends and it will be sent free for a year. They publish their postoffice receipts, which look large to the uninitiated. On the strength of this they get advertising, but the advertiser soon finds he gets no returns, because a journal that is not paid for has no value and is not read. An advertiser in one of the large cities recently showed me a number of requests for samples of his preparation that had

come in from an ad. in one of these journals, and when I told him that most of the doctors requesting samples sold them to patients and beat him out of just that much money, he seemed surprised. When it is remembered that a postal card will bring samples of almost everything made, a sample request cannot be taken as a criterion of value, for many physicians not only get a great deal of medicine in that way but their literature as well.

A journal that accepts anything but cash soon finds its office looking like a second-hand store, and its pages are devoted to advertising these articles at bargain-counter prices. Is there any dignity in this? Where is the dignity of a colored insert in the body of the journal. Does it embellish a good article? *Never.* I am glad to notice a growing disposition on the part of the best doctors to turn down a journal of this kind.

There are only a few pharmaceutical houses in America, and nearly every product put out by them has been counterfeited. There are constantly springing up in all sections unscrupulous parties who are putting on the market, with no capital but cheek, substitutes of every remedy in the pharmacopeia. The number of journals and the number of houses is entirely out of proportion, and so, as in all things, it is a survival of the fittest; the weak ones go down, doing some damage to legitimate publications and lowering the dignity of a sacred calling.

The religious press will be damned forever, and should by the medical, for their undignified advertising to diseased minds and bodies of "sure cures free" by returned missionaries. These human hyenas sometimes have offices in the Bible-houses, and prey upon human misfortune. Their prescription, given free, calls for an ingredient no one has but themselves, and they take what they can get for it, according to the need and pocket-book of the unfortunate; and they go on robbing from year to year.

It is said there are necessary evils in this world; the medical advertising agent seems to be one of them. But allow me to ask, what has he done to elevate the dignity of advertising in medical journals? There are a few agencies that handle legitimate business in a dignified way, but most of them cause dissentious and separate business relations between houses and journals which should be close, by making all sorts of promises that cannot be fulfilled; contracts done with all kinds of conditions that the self-respecting jour-

nals cannot comply with. I had occasion to call on an agent recently in New York in regard to a contract he had sent three times, and it had been as often returned. When I explained to him the necessity of the full formula being given, he said *he* had written the formula and it was enough for anybody, and many journals had accepted it. Unfortunately the last statement was true, and some had surrendered all dignity and allowed him to run their business.

I had a page ad. from an old established house for years, but through the interference of one of these agents shortly after he came into the field I had none. The advertiser asked, why? My answer was, too much agent. He handed me a new contract and we are now good friends. This proves that a house will drop an agent when they learn that he is detrimental to their interests. Agents never know when they have enough, never stop taking, and to use a trite expression, play both ends against the middle and laugh at the journals for allowing the business to run. On the other hand, they never lose a chance to cast reflections at a journal with a rate-card which is strictly adhered to. Where is the dignity of allowing some one else to run your business, at your loss and their profit? One man who handles the business of a large firm told me he cared nothing for simply an ad., what he paid for was what the journal published in its reading pages. He was much surprised when I refused to contract because I would not let him dictate the terms. This man was not wholly to blame for this, as some publications had surrendered all dignity and accepted his offers.

In my opinion, a dead publisher who knew his space was worth so much, and got it, is worth a hundred live ones who will allow the agent to jolly them along and get their best space for a song, and he does the singing. The publisher who has surrendered to the agent is at his mercy for any new business.

Some agents get from 30 to 50 per cent on all business for a number of years. They hire a good solicitor for a few days, pay him a few dollars, let him go as soon as he brings in enough contracts, then sit in their office and live off the journals that were weak enough to agree to allow them so much commission. If weak publications would only learn that it is impossible for any agent, firm, or house to kill an established publication that has maintained a high standard, it would save much of the unfortunate, undignified bickering that goes on.

There is no dignity in running a dead ad. No dignity in not collecting promptly. None in accepting stock in payment. And none in taking ads. with strings to them. Low rates and liberal discounts invariably denote small and valueless circulation. I believe that the time will come when the subscription list and legitimate houses will support the dignified, ethical journal.

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SERRATION AN ERROR IN PRACTICE. By J. W. Worcester, M.D., Middletown, N. Y. I came to the conclusion some years ago that serrated instruments were a *great mistake*, except with the most careful and painstaking operator, and therefore gave up their use. My reasons for so doing were principally confined to the fact that the serrations were the cause of so many leaky fillings, through the abrasion or chipping off of the tooth-substance from the walls of the cavity during the operation, and which became more or less incorporated and condensed with the gold, despite the use of the chip-blower. This bone-dust being a perishable substance, and continuing to the edges of the cavity in the filling operation, as it invariably does with these instruments, without doubt was, and is yet, the principal cause of leaky fillings, especially with the beginners and also with many of the elders. The acid condition so often present around the teeth furnishes means for making a solution of this confined bone-dust, with the result familiar to all.

To overcome the difficulty and make an absolutely tight plug, I adopted the method of using the smooth point—not a burnished smooth point, but one that is rubbed over frequently with a spun-glass burnisher or a medium-grit emery disk, although I use both constantly. These keep the steel point clean and bright, and with the electric mallet, which I use and which should be preferably used with these instruments, I can weld the gold perfectly solid and intact, and not injure or abrade the walls of the cavity in the least. You can mallet around at the junction of the gold and the tooth with these instruments, and the result is a tight joint with *no* bone-dust intermixed.

The instruments I use are round, either straight or curved, with rounded points, and will be found perfectly practicable in all cases for gold work, using several sizes. I invariably use crystal gold cubes, which can be welded perfectly with these instruments without annealing, until I get near the surface, when with the use of

annealed foil pellets of a very light form (smallest size) I bring the filling to a finish and polish off.

My method of preparing the cavities is to first grind or disk away all frail walls around the cavity to a self-cleansing surface and polish. Then I proceed to excavate the cavity with just enough undercut to hold the filling, leaving *no sharp* angles therein, square across at the cervical walls, and round off the edges of the cavity (as it joins the previously polished surface) with a fine finishing bur or fine office-made emery points. The rubber-dam is applied and ligated to the teeth and the moisture removed with absorbent paper, then wiped out with sulphuric ether, and lastly with a solution of bichlorid of mercury in chloroform, 1-1000. The cavity is now in excellent condition to fill, and I carry this out in the preparation of all cavities for whatever kind of filling. After the cavities are filled with a slight overhang, I disk down to the original polished surface previous to filling and continue to polish until impossible to do so more.

These fillings I find give good service. I would like to see the profession generally take as much pains and do better dental work, and abolish the pernicious habit of using serrated instruments, as I consider them an abomination and a curse in the hands of most operators.—*International Dental Journal, June, 1898.*

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CONSUMPTION CURE. By Dr. Murphy, Chicago. It is to but one feature of it that we are now going to call attention, namely, the part relating to the treatment of tuberculous disease of the lung by compression of the organ. As we understand the matter, Dr. Murphy proceeds upon the assumption that a tuberculous lesion of the lung, like one of a joint, for example, may ordinarily be healed quite readily by securing immobility, functional rest, of the affected part. In pursuance of this idea he immobilizes the lung by compressing it, crowding it back upon its hilum, establishing a sort of artificial atelectasis. This he accomplishes by injecting a quantity of nitrogen into the pleural sac. Nitrogen, he finds, neither exerts any untoward effect upon the pleura nor is absorbed to any appreciable extent; it simply keeps the pleura distended and the pulmonary tissue compressed. It is said that during the continuance of this compression the patient feels remarkably free from the symptoms that had previously preyed upon him.

The gas is allowed to remain in the pleura for a period of several weeks, and then it is withdrawn. In a goodly number of instances the symptoms do not return, and the inference is drawn that the disease has been overcome. The lung again becomes aerated and expands almost if not quite to its normal size. If, on the removal of the nitrogen, the morbid symptoms return, more of the gas is thrown into the pleura and kept imprisoned there for another term of weeks. It is said that this second injection is by no means always found necessary, and that when it is called for it almost invariably suffices for the cure of the disease in that lung. Then the other lung is treated in the same way.

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CARE OF THE FINGER-NAILS. One consideration that makes the care of the finger-nails of great importance is that every person, regardless of vocation, is liable to gather under the free margins matter which may be very poisonous. There are on record innumerable cases where slight scratches of the skin by the nail have resulted in malignant and even fatal inflammation.

If from any cause the nail becomes thick and inelastic, it soon becomes rough and assumes the appearance of an excrescence rather than an ornament. In this condition it is much more difficult to keep clean. To avoid this thickening of the nail the hand should not be subjected to the action of strong alkalies or acids; and plaster-of-paris when brought in contact with the hands is especially conducive of ill-shaped finger-nails. Never remove foreign substances from under the nail by means of a penknife or any other instrument which will scrape or scratch the under surface of the nail, as this practice causes the nail to chip, crack and grow thick.

To cleanse the surface and wash away all irritating matter there is no better method than the use of the brush when rubbed into a mild fluid disinfectant. Soap will answer admirably for this purpose, and when employed with regularity will restore the elasticity of the nail, a quality most essential to usefulness and esthesia.

The paring should be done while the nail is yet wet from the soap bath, and the trimming should be effected with an instrument which will make a perfect edge; sandpapering or scraping the nail is barbarous to say the least. Never cut the nail to the quick, but permit a free or extended portion, about one-twelfth of an inch.

The corners should not be cut close, as the trouble known as

ingrowing finger-nail will be the consequence; and this frequently causes untold pains and eventually becomes the seat of foreign matter which causes sufficient disturbance to necessitate the removal of the finger-nail. Few people should give more attention to this subject than the dental surgeon, for the dual reason that it will be safer for both himself and his patient.—Translated by Dr. B. J. Cigrand from *Journal der Heilkunde, May, 1898.*

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PRESENCE OF ARSENIC IN CEMENTS. By A. B. Howatt, D.D.S., Chicago. Read before the Odontographic Society, April 11, 1898. At a recent meeting of a local society during the discussion of a paper by Dr. H. J. Goslee on "The Advisability of Devitalization in Crowning Teeth," several theories were advanced as to the probable cause of frequent death of pulps under metal caps, the chief one of which was presented by Dr. J. H. Prothero, who called attention to the fact that arsenic in some form or other was present in most all of the zinc oxid powders prepared by the manufacturers of cements.

This assertion seemed to offer food for thought and opened up a channel through which it is not impossible to attribute the probable cause of the death of many pulps under crowns in capping operations, and even from ordinary cement fillings, and has induced me to make a series of experiments along this line, the fruit of which will no doubt be as surprising to many of you as it was to me. Procuring some twelve or fifteen samples of various makes and subjecting each very carefully to "Marsh's test," it was found that not one of them withstood the reaction for arsenic; that none showed the entire absence of it, while many showed it in large and varying proportions.

However, as only a limited time could be given to these experiments, it was not possible to make a thorough quantitative analysis; yet the deductions reached are based upon the results of a plan which was adopted and carefully carried out, and while perhaps to some slight extent inaccurate, yet sufficiently convincing in general, and will serve to give some conception of the quantities involved.

The test referred to, "Marsh's test," was used exclusively in the experiments, which on account of the difficulties encountered and for the reason that many perhaps may not be now familiar with it, will be briefly explained in detail. Into a large-mouthed bottle is

inserted a double perforated rubber cork through which passes two glass tubes, one of which is a funnel tube, the other a shorter one, and the end of which is tapered to a fine point. In the ordinary experiments hydrogen gas is generated in the bottle by the action of hydrochloric or sulphuric acid upon metallic zinc, but as it is almost impossible to obtain a specimen of zinc which does not contain traces of arsenic, after repeated trials metallic magnesium was used in its stead. When it was found that all of the air had been driven from the bottle, the hydrogen escaping from the fine pointed tube was ignited and the flame tested for arsenic. If the flame was found free the measured quantity of zinc oxid (one gram) was suspended in dilute hydrochloric acid and poured into the bottle through the funnel tube, and the resultant flame in each case was allowed to play upon the porcelain for five minutes.

On the porcelain plates which are exhibited will be seen a comparison of the arsenic spot, the one made by the zinc oxid powder, and a spot made by what some of the wholesale chemical houses sell as chemically pure zinc. It will be observed that the gray powders give a less reaction for arsenic than the yellow, owing probably to the higher heat to which they are exposed in fusing, arsenic being volatile at 400° F. It was also found that different specimens of the same make of cements gave varied results.

Acknowledging these deductions to be conclusive then, in the evidence of the presence of arsenic in cements, it is comparatively easy to ascertain the ultimate injurious effects which must be attributed to the placing of cement in contact with any surface of a tooth not protected by enamel; and to trace perhaps the cause, or at least one cause, of the death of pulps under crowns or cement fillings. If, then, cement in proximity to or in contact with the pulp is an irritant, which is conceded, is it due to the presence of arsenic?

Discussion. Dr. W. V-B. Ames: Dr. Howatt spoke of cement being recognized as an irritant, but I do not know upon what grounds he bases that opinion. I have not so regarded it, except in its fresh state, and properly crystallized it is no longer an irritant. From experiments I am led to believe that the danger of pulp devitalization from the presence of arsenic in cement is dependent upon two conditions—first, the quantity present, and second, the porosity of the cement mass after crystallization. If a cement with a given proportion of arsenic should crystallize with very little porosity,

the only arsenic that could act upon the dentin or near-by pulp tissue would be that upon the free surface of the cement nearest it. If it was not porous the amount of arsenic would be so infinitesimal as to be inert, but if a cement contains much arsenic and is also very porous there would be nothing to prevent the most of that arsenic from working on the vitality of the tooth.

Dr. E. M. S. Fernandez: Bichlorid of mercury is used very successfully in the treatment of skin diseases, and its absorption is prevented by the use of collodion in the mixture. The diseased parts are painted with it and the collodion holds the bichlorid in place and prevents it from absorbing. This is I think a good comparison to cement filling. Since crystallization has taken place the infinitesimal amount of arsenious acid present in the oxid of zinc is rendered inert, as well as the phosphoric acid. When using cement as a filling I saturate the cavity with a 95 per cent solution of carbolic acid, dry it again and put in the filling. The carbolic acid coagulates the surface of the cavity sufficiently to prevent any trouble from the irritating effects of the phosphoric acid, and probably also prevents whatever little damage may be done by the arsenious acid. In regard to the porosity of cement, I find that mixing it thick and using pressure makes it solid; but mixing it thin and smearing it in the cavity leaves it porous and useless. The pain which is sometimes caused when a crown is cemented is not due to the arsenic present, but to the phosphoric acid coming in contact with the uncovered and irritated tissue. The proof of this is that the application of bicarbonate of soda with a few drops of water to the parts will greatly relieve the pain, counteracting the acid by its alkaline power.—*Dental Review, June, 1898.*

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OUR INSTRUMENTS. By B. C. Boeseke, D.D.S., San Francisco. Read before S. F. Dental Assn., March 14, 1898. The subject of "Our Instruments" is one that is not taught to any extent in colleges, nor is it often spoken of or written upon by the profession, so that what little knowledge we acquire of it is through our own experience. I believe it to be of such importance that it should find a place in the curriculum of every college, for it gives a mechanical training which cannot be acquired in any other way. In college they teach us how gold, silver, platinum, etc., are refined and prepared for our use, either pure or as alloys, but what do they tell us

of steel, which we use more than any of the other metals? We are simply told that steel becomes hard and brittle when heated to redness and suddenly cooled by plunging it into cold water; and becomes soft again by reheating; but they do not tell us what degree of heat is most conducive to the best results.

Steel is manufactured by heating bars of wrought iron to redness in contact with charcoal, which causes it to become fine-grained, instead of fibrous, and more malleable and fusible; this is then melted and cast into bars or rods. The best steel we have for instrument-making is Stubbs.

A good rule to follow in working this metal, either in bending or forging, is to work it at as low heat as possible, annealing often, and never heating above a cherry red. Be careful not to do as I once saw an instructor do at a clinic, heat the instrument which you are making to almost a white heat, and then let it cool and try to bend it, for you will break it almost every time.

After filing your steel down to the required thickness, polish it, then decide where and how you want to bend it. Heat and bend while it is still hot, using a copper or brass hammer, which will not dent the steel as much as a steel one. Now after you have it in the required shape, polish out any hammer marks that might be on it, and you are ready to temper. To do this you first coat the instrument with a layer of wet salt and dry it on; this will prevent any scaling; bring your oil or water near to your gas flame. If the instrument is small it is best to hold the burner so that the flame is just over the water, for, if you have the flame away from your cooling fluid, in bringing the instrument to it it loses some of the heat, and your temper will not be so good. Having everything in readiness, heat to a cherry red and suddenly plunge into water. Then polish, being careful not to break the point, which is very brittle; draw the temper by heating quite a distance from the point, using a small flame and watch the colors carefully, so that you will have a straw color at the cutting edge and blue color at the point where the greatest strain comes; this being a spring temper will lessen the liability of breakage.

When the temper is drawn sufficiently, plunge into cold water and give a final polish, which is easily done by having leather wheels or buffs five or six inches in diameter mounted on the lathe, using on them a combination of parafin and emery powder; finish

with crocus or rouge. A great deal depends upon this polish, for the finer it is the easier it will be to keep the instrument clean and in an aseptic condition. This should not be overlooked, for after every operation each instrument we have used should be cleaned and sterilized. There are many ways of doing this, either by dry heat or antiseptic solutions. I find a solution of lysol, which is a good antiseptic, works well and does not rust.

At every clinic which I have witnessed there has been one very essential thing lacking—an oilstone, on which to sharpen excavators, chisels, etc.; this may have been due to the cavities having been partly prepared before the clinic. In mentioning this I wish to emphasize the importance of keeping your instruments sharp, as it will enable you to do better and quicker work, and with less pain to your patient.—*Pacific Medico-Dental Gazette, June, 1898.*

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ELECTROLYTIC PRODUCTS OF DENTAL MEDICINES. By Weston A. Price, D.D.S., Cleveland, O. There has been a demand from the profession and a request from Dr. Bethel for some data as to the actual ions and their direction of movement, produced by passing an electric current through various dental medicines. The discussions upon the theoretical phases of the question have, on account of the breadth of that subject, not gone into a discussion of the practical application of the known laws to the uses of the common medicaments.

In passing the electric current through any medicine capable of conducting the current, there will be a movement of a part of some of the molecules in each direction. For example, in passing a current through a solution of sodium chlorid, some of the molecules will divide, the sodium ion going to the negative pole and the chlorin ion going to the positive pole. If platinum electrodes be used, the amount of sodium liberated at the negative pole will be equal to the chlorin liberated at the positive pole. And each, in any solution, will be an exact expression of the amount of current that has passed. These may react upon the electrode or upon the solution about the electrodes, as would happen with the chlorin in this case should we use copper or silver, or in fact almost any metal except platinum or iridium. Or as occurs with the sodium in this case, which reacts with the water, forming sodium hydrate, NaOH, with the liberation of hydrogen. It is, in fact, very seldom that the ions themselves

are liberated; they usually react with the electrode or with the fluid, with the liberation of a gas or a metal. All processes of electroplating are a simple electrolysis.

Space will not permit of any suggestions as to what electrodes or reagents would be indicated in the treatment of the various pathological conditions, as pyorrhea alveolaris and bleaching teeth. We will restrict ourselves to the manner in which the molecules will divide and direction these parts will move in, giving in some cases the rapidity of migration. This latter quality is expressed by stating in centimeters the distance the ion travels in one second under a current of a potential fall of one volt per centimeter of solution, temperature at 18° centigrade. For convenience the one-hundred-thousandth of a centimeter is used instead of decimals; thus hydrogen travels 0.0032 centimeters per second, which is usually written 320, meaning 320 one-hundred-thousandths. This will be the meaning of these terms throughout this paper.

The more dilute a solution the greater per cent of the molecules will be ready to take part in the carrying of the current up to a certain point of dilution, and this point is known as the point of complete dissociation. This point varies greatly with different substances, but with sodium chlorid is at about one in one thousand, at which concentration approximately all the sodium and all the chlorin would be taking part in the carrying of the current. This matter of concentration or per cent of dissociation will not enter materially into the results of our practical work except at the extremes, and we need not consider it ordinarily. The reason for this is very simple, since in any solution capable of carrying the current there are always lots of free ions. When any compound substance, capable of conduction, is held in solution it does not maintain its molecular form, but some of the molecules, or all at sufficient dilution, will divide into two or more parts, called ions, usually two, but sometimes three or four or more, each carrying an electric charge, some positive and some negative, but always an equal amount of the two kinds of electricity. This takes place without the passage of an electric current, and, indeed, no solution will conduct a current that does not contain free ions, for it can only do so by their movement and giving up their electric charges to their opposite electrodes. When a current passes through any solution the positively charged ions move toward the negative pole and

the negatively charged toward the positive pole. By no other means can a current pass through any liquid, except a metal. Very many substances do not dissociate in solution, as sugar. Some others do so, but to a very slight extent. The former are perfect non-conductors or insulators to the current, while the latter conduct but slightly. These latter include many of our dental medicines.

In electrolysing hydrochloric acid, HCl. in water, H will go to the negative pole and Cl. to the positive pole, where it will react with the electrode unless it be a very noble metal, and even then to a slight extent. If the current have a potential gradient of one volt per centimeter and the temperature about 18° centigrade, the H ions will travel with a velocity of 320 one-hundred-thousandths of a centimeter per second, or approximately three inches in an hour, and the Cl. will travel to the positive pole with a velocity of 69, always carrying equal electric charges. With sulphuric acid, H_2SO_4, two H ions will go to the negative pole and SO_4 to the positive pole, where it will react with the electrode or with the water, according to the following equation: $2SO_4 + H_2O = 2H_2SO_4 + O_2$. If a copper electrode were used it would unite with it, forming copper sulphate $CuSO_4$, which would immediately dissociate and begin to assist in carrying the current, the copper forming a new ion and going to the negative pole and SO_4 to the positive pole.—With nitric acid, HNO_3, the H will go to the negative pole and NO_3 to the positive pole, with a velocity of 64.—With silver nitrate, Ag NO_3, Ag will go to the negative pole with a velocity of 57 and NO_3 to the positive pole.—With potassium iodid KI, K will go to the negative pole with a velocity of 66, and I to the positive with a velocity of 69.—With sodium hydrat, NaOH, Na will go the negative pole with a velocity of 45 and OH to the positive pole with a velocity of 182.—With lithium iodid, LiI, Li will go to the negative pole with a velocity of 36 and I to the positive with a velocity of 69.—With ammonium hydrat, NH_4OH, NH_4 will go to the negative pole with a velocity of 66 and OH to the positive pole with a velocity of 182.—With hydrochlorat of cocain, $C_{19}H_{27}NO_4HCl$, all investigations so far indicate that $C_{19}H_{27}NO_4H$ goes to the negative pole with a velocity of about 7 and Cl. to the positive with a velocity of 69.

These determinations on cocain were completed too late to appear in their proper connection in a recent paper published in May *Items*. We are indebted to Professor Morley, of the Western Reserve Uni-

versity, for these determinations on cocain hydrochlorat, which mean a tremendous amount of tedious experimentation. This means that the negative ion of cocain hydrochlorat will migrate about one inch into a tooth in one hour at a potential gradient of 25 volts.

I would like to call attention to the behavior of the Cl. ion which goes to the positive pole. If that electrode be anything but the noblest metals, as platinum or iridium, it will react with it, forming the chlorid It will even do this to some extent with gold, not enough to positively exclude it as an electrode in cataphoresis, though it is not nearly so good as platinum, with which the chlorin reacts, but very slightly. Copper or silver, or German silver, or any metals of their class, would almost produce a failure if used for the positive pole in cataphoresis, because they would form a chlorid with the Cl. and this would immediately dissociate, the metal forming the positive ion and go to the negative pole and the Cl. to the positive again. Thus in a short time this new compound would be carrying the current instead of the cocain hydrochlorat.

Almost any solution we may get hold of, unless prepared with the utmost care, will contain enough impurities to prevent us from determining by its conductivity whether it is an electrolyte or not, as for example, ordinary water, which is a splendid conductor, while absolutely pure water is almost as good an insulator as gutta-percha. Such purity cannot be had, however, by ordinary means. For this reason we should expect the best results in cataphoresis, and in my experience we do, from freshly prepared solutions of as pure as possible a quality of cocain salt in distilled water, the purer the better, and never should we use anything but a very noble metal for the positive electrode, preferably platinum.

Under the head of this paper should properly come a discussion of the various agents used for bleaching teeth, in connection with the electric current. These would take too much space and may be made the subject of a special article. I will say, however, neither sodium peroxid or hydrogen peroxid, or even chlorid of lime, are found in qualitative tests of electrolysis to behave as has been suggested.

It has been quite generally taught by some writers and quite generally believed, that in electrolysis, certain medicines move unchanged towards the negative pole, and certain others move toward

the positive pole. THIS IS NOT SO, and every effort should be made to correct this terribly misleading impression. A part of the molecular contents of some of the molecules of that medicine go in each direction and electro-equivalent parts in each direction. Electrolysis must not be confounded with osmosis, which is the movement of a substance held in solution as it diffuses to equalize the concentration.—*Ohio Dental Journal, June, 1898.*

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SURGICAL TREATMENT OF ALVEOLAR ABSCESS. By L. Meisburger, D.D.S., Buffalo, N. Y. Read before Eighth District Dental Society, Buffalo, N.Y., April 26, 1898. I think I can say without fear of contradiction that as a rule dentists in the past have been somewhat fearful of undertaking any operation which was not of daily occurrence in their practice.

There are several factors which enter into the prognosis of a tooth and its surroundings which are affected by alveolar abscess. *First.* The severity and character of the inflammatory action and septic invasion. In cases in which inflammatory action is localized and presenting none or but little febrile disturbance, the prognosis is as a rule favorable, but a slight amount of tissue necrosis occurs. *Second.* Should, on the other hand, the inflammatory action proceed with marked violence, it is possible that not only may the pericementum suffer extensively, but a considerable portion of the periosteum over the process may be raised from the bone during the escape of the pus. Should this separation of the periosteum be maintained for more than a few hours the underlying bone may suffer to the extent of necrosis. In case of marked lymphatic involvement, the neighboring glands being swollen and tender, or even the skin over them exhibiting evidences of glandular inflammation beneath, more or less septic intoxication will probably occur, and unless the focus of infection be promptly sterilized, septicemia is to be feared.

Treatment.—The general treatment of alveolar abscess is that for the treatment of abscess in any part. The details are of course modified in accordance with the anatomical peculiarities of the part to be acted upon. The principles are the removal of all dead matter, together with the active causes of the inflammation and suppuration —that is, microorganisms and their products—and the induction of tissue regeneration, which shall restore parts lost through the form-

ation of the abscess. The instrumental means are the instruments employed to gain access to the focus of disease-action and those employed in the mechanical removal of dead parts. *First.* The mechanical measures include the agents employed to wash out the abscess tract. *Second.* Those applied to destroy the active causes of the suppuration. *Third.* The remedies applied to induce new tissue-growth, and next, those employed to maintain asepsis until the healing process is complete.

In opening an abscess the surface should first be carefully cleansed, and other antiseptic precautions observed. By this I mean that all instruments should be antiseptically treated. The first step then in our operation would be the cleansing of the surface with hydrogen dioxid, followed by a small injection of a five per cent solution of eucain B; an incision is then made at a point on the gum immediately overlying the apex of the affected root, with a pointed bistoury thrust down to the bone—a good-sized incision should be made. The bleeding is then encouraged by the use of hot water for a few minutes, when a pellet of cotton which has been dipped in a solution containing one or two per cent of cocain and antipyrin four per cent is then laid against the periosteum at the bottom of the cut. In a few minutes bleeding will cease, when a spear-drill driven by the engine is passed through the bone into the tissue of the apical space.

Any bleeding which may occur is encouraged as above mentioned. For washing incisions and the abscess in such cases there is no agent more acceptable than a twenty per cent solution of phenol sodique, it being both sedative and antiseptic. A fair-sized round bur is then used to cut away necrosed bone if any be found. If it is found necessary to excise the end of a root, a small fissure-bar is used and the root rounded, leaving no rough edges.

The wound is now cauterized with a fifty per cent solution of zinc chlorid and the cavity loosely filled with boracic acid gauze, your patient being seen every day, and less gauze inserted at each dressing as granulation progresses. The time required for healing is from four to ten days, according to existing conditions. An antiseptic mouth-wash should be recommended in addition to the above treatment.

Let me cite the case of a patient who was sent to me who had had an upper central incisor crowned some six or seven years previ-

ously; shortly after it had developed an abscess, which having remained all these years had become chronic. The patient would not think of being without a tooth. What could be done? One of two things: the taking off of the crown and insertion of an artificial denture, and consequent treatment along old lines with doubtful results; or the removal of the crown, canal antiseptically treated, end of root carefully filled, and another crown immediately put on, and abscess treated as advocated by this paper. I report this case, as it shows where this method can be applied with gratifying results to both patient and operator. I have taken it for granted that the canals of teeth treated in this manner have previously been treated and thoroughly filled.

In conclusion let me say, then, that this operation is a very simple one, remembering that cleanliness is one of the first principles to be observed, a little care when operating on the anterior teeth so as not to penetrate the floor of the nose nor the antrum of Highmore over cuspid or back teeth. This you can avoid by measuring your root approximately. If by accident you do penetrate these spaces, keep them antiseptically clean by using boracic gauze, and you need apprehend no further trouble. I have spoken of thoroughly filling and treating the canals of teeth operated upon in this way, for, if this is not done, and your operation fails, you will consider your operation a failure, when in fact your preparatory work was carelessly done instead.—*Dental Cosmos, June, 1898.*

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METHOD OF USING SOFT FOIL. By Benjamin Lord, D.D.S., New York. Read before the N. Y. Institute of Stomatology, March 1, 1898. For instruments I depend largely upon what is known as the hatchet excavator. The blades, of course, must be of different lengths and widths and curved at different angles, some having also a slight bend in the shank. Some are wider at the cutting edge than at the angle of the curve, others have the sides or edges parallel, and some of both these classes should have one or both corners ground off so that the cutting edge would be rounded. Then I use a cutting instrument of a peculiar shape, which is most effective on the labial and buccal surfaces, and on the approximate surfaces where the spaces are considerable. This instrument is specially adapted for preparing and shaping the walls or sides of the cavity and is not intended to be used on the floor of the cavity.

I use burs very little except to open crown cavities and dress margins, the proper preparation of which I consider of the greatest importance to the accuracy and success of the fillings. I have instruments cut much as burs are, for dressing away the edges of the cavity after the removal of the decay, and for giving the cavity a proper shape, including a slight undercut. These instruments if properly used take away all decomposed structure and very thin edges, leaving margins of a thickness not likely to be crushed or powdered in any part of the operation of filling. Then I use a suitable instrument to give the edge of the cervical wall a slight bevel outward, so as to bring the filling slightly over the margin of the cavity. I would also thus bevel other margins that are thin.

I feel that the dental engine is used very often to the destruction of healthy tooth-structure and the marring and notching of the margins of cavities. It is unquestionably a very useful appliance, and it is also a very harmful one when used improperly or where it ought not to be.

I prefer soft foil because of its easy adaptation to the walls of the cavity and the greater ease and certainty with which it can be placed and packed without danger of tipping from becoming hard too soon, which is often true of cohesive gold. Cohesive foils and other preparations of cohesive gold have their uses, such as the restoration of broken corners or the sides of the teeth, where it is desirable to make such restorations, but I may say I think it is done quite too frequently, particularly with the front teeth, thereby giving them a more unsightly appearance than the marred or broken corners would present. My experience and observation lead me to believe that cohesive gold is not so well adapted for general use as soft gold.

In my judgment the best form in which to use gold is in sheets, parts of the sheet being folded in strips of suitable widths for the cavity in which they are to be used. I consider that strips or folds can be handled with more ease and certainty in the process of filling than can rolls, pellets, or blocks. It is my belief that too many forms of gold are prepared for our use, often leading to confusion and embarrassment, particularly on the part of the inexperienced. If my memory serves me correctly, the late Mr. R. S. Williams advertised that he prepared and had for sale one hundred and fifty different varieties of gold for dentists' use. Filling teeth has so many difficulties to be overcome, and so much accuracy and fidelity

are required, that we must follow certain lines for a long while and in the use of particular forms of gold, to arrive at a good degree of excellence.

By using suitable points all cavities having three walls can be filled and the fillings contoured by the use of soft foil; this may be done with equal certainty and success with tin-foil or with a combination of gold and tin. I depend mostly upon a single form of instrument for placing the gold and for condensing it towards the walls of the cavity. Occasionally I use a point somewhat more curved to carry the gold already placed with more force against the wall or into a corner of the cavity (always guarding against too much pressure), so that each additional layer may not only be placed against that which is already in position, but will be carried into it, thereby uniting the whole mass.

Then I come to the surface condensing, which I begin with a small four-sided instrument, curved to an angle of forty-five degrees and pointed, the sides grooved, and the edges of the grooves serrated. I assume, as must be the case to insure the best results, that the foil has been accurately placed, the layers added in regular order and condensed as solidly as possible by lateral condensing, and that the gold is raised sufficiently above the margins of the cavity, so that after the surface is made solid by using the point of the instrument and the edges of the groove, the filling will still have a contour or oval surface, if an approximate filling. I wish to attach great value to this surface condensation with small points, as it more or less spreads the filling to some extent towards the walls of the cavity and ties the whole mass together more securely. I speak of leaving the surface of the filling contoured or oval, which is certainly most natural, and if so, highly desirable, but there is interest in the old style of the flat or even the concave surface, as there is much more certainty that the gold will be made solid against the walls of the cavity with less care, when the surface is thus worked down. We find that fillings so finished have done most excellent service. But by using points and making the pressure near the margin of the filling, so as to condense against the walls, and also using the edge of the groove of the instrument I have alluded to, full success may be secured when the surface is left contoured.

I now come to the use of the broad instrument with one side flat and the other somewhat oval, both for further condensing and bur-

nishing. The oval side will not be so likely to come in contact with the margins, and can be used to greater advantage to condense the surface; the flat side also possesses advantages over the oval for a part of the work. I am now ready to give the margins their finish, and my instruments are well adapted for the purpose. They have one side flat and the other oval, are cut like burs, and are used much as a file of the same shape would be. For the final finishing I use a small instrument, the same as I use for the removal of tartar or any roughness about the teeth, and if there should still be any surplus gold at the margins this instrument will be sure to detect and remove it. I attach little if any value to the mere burnishing of the surface of fillings, only so far as it gives greater solidity to the surface. The great point in the finishing of fillings is the smoothness and solidity of the margins, so that no surplus material be left overhanging.

I do not think that any kind of a disk, sand-paper or corundum, should be used on the approximate surfaces for finishing fillings, as they are liable to cut away tooth-material or filling that ought not to be removed, and I do not like the use of the polishing strips for the same reason. I also think that a bur or burnisher in the engine should never be used to reduce or polish fillings in the grinding surfaces of the teeth, as there is too much danger of reducing the cusps or injuring the margins of the cavity. The grinding surfaces should be finished to correspond in irregularity to the natural surface of the tooth, and instruments may be used for that purpose. The burnishing is really of no importance except to give solidity.

I will now give my manner of preparing and handling the gold. I cut a sheet of No. 5 foil generally into four pieces; if the cavity is small I would cut the sheet into six pieces. I fold each piece into strips, for the larger cavities about an eighth of an inch wide, and for the smaller ones a sixteenth of an inch. For the folding I use one side of my shears, instead of a table-knife or a paper-cutter, and I fold on a small cushion made of soft leather and filled with wool. I prefer this to anything harder. The strips are placed on a folded napkin, and I use the point of the instrument with which I am working to pick up the strip and carry it to the cavity. I usually cut the strips into two pieces, sometimes three. The instrument that I use and depend upon mostly for placing, uniting and condensing the folds is properly curved at the end, and an absolute point made by a very short bevel on three sides with a sharp file, and the fourth

side touched at the point very slightly with the file, so that the line of the curve may not be changed. I do not, as would be understood, condense with the point of the instrument, but with the side and edge of the bevel, and unite the folds with the point. I strive as far as possible, in placing the foil in the cavity, to fold the strip in so as to form a loop and bring the loop to the surface. I prepare and use tin-foil the same as I do gold, and also gold and tin in combination. I use three parts gold and one of tin when combining the two metals, folding them together with the gold outside.—*International Dental Journal, May, 1898.*

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SOME SUGGESTIONS IN PROSTHETIC DENTISTRY. By Dr. John T. Usher, New York. Read before First District Dental Society, Feb. 8, 1898. The suggestions embodied in this paper are really a description of some methods introduced and employed in my own practice, and as such they have passed beyond the suggestive stage and assumed the practical.

Vulcanizing on Silver.—The use of silver as a base-plate material is very limited, especially as a base with rubber attachments. The principal objection to its employment is generally imputed to the fact that it tarnishes in the mouth. But I think we can reasonably infer that in those cases where rubber attachments are to be made, the real and only objection lies in the difficulty of vulcanizing rubber in contact with silver. There are two ways of accomplishing this in common practice. The first is by thinning the silver base where the rubber is to be attached. This necessitates the sending of the silver to the tinsmith to be tinned. The second method is by introducing tin-foil between the silver base and the rubber. The rubber will vulcanize on the tin-foil perfectly, but I have never been able to discover either a chemical or a mechanical union between the rubber and the silver, although it is claimed that there is such an union. The explanation of this phenomenon is that silver has an intense affinity for sulfur, and also for all the known vulcanizing agents, such as chlorin, iodin, bromin, etc.; so that instead of the sulfur forming a chemical combination with the rubber it combines with the silver, forming a metallic sulfid. To overcome this we must interpose some non-affinitive substance between the silver and the rubber before we can vulcanize the latter, or if we do interpose an affinitive substance between the rubber and the silver, its

affinity must be confined to the silver alone. According to the latter theory, it seemed to me that we should not be limited to the employment of tin or tin-foil for this purpose, and so I tried gold-foil. This proved successful, but there appeared to be no definite union. The next trial was with a silver plate coated with mercury. The rubber vulcanized upon this thoroughly, but on separating it from the silver the amalgamated surface of the silver appeared to be somewhat oxidized, though not to an objectionable extent. The third experiment was on a silver plate coated with mercury and covered with gold-foil, to absorb some of the mercury. The results were entirely satisfactory, and the materials are such as are available in every dental office. I think it quite possible that other affinitive agents, such as metallic chlorids, could be employed for the same purpose, but have not tried them.

Another System of Making Gold Crowns.—In making gold shell crowns for capping the incisor and cuspid teeth we aim to produce a crown that shall be the exact counterpart of the natural tooth in each particular case. If we possess a set of good dies or forms and facings, we can usually find something that will suit our purpose. But many of us are not provided with any system of dies or facings, and so must resort to other methods of forming our crowns. The method employed by fully seventy-five per cent of crown and bridgeworkers is the ferrule system; that is, a ferrule is made to fit the neck of the tooth to be crowned a little longer than the finished crown is to be. The face and cutting edge are contoured with pliers, and the lingual portion cut or filed to approximate the shape desired, then placed on a flat piece of gold and soldered. I have seldom seen a good crown made by this method.

The above method not satisfying me, I finally hit upon a system which is highly commended by some of the best crown and bridgeworkers. For cheapness, simplicity and perfection of contour it can scarcely be equalled, and is not excelled by any other method I know of. An incisor or cuspid crown can be made in from ten to twenty minutes, and the average cost per crown for the gold in the rough is about sixty-five cents for all sizes. The method is as follows: A model is first secured of the tooth to be crowned, and of the adjoining tooth or teeth we wish to match. A plain porcelain tooth, either plate or rubber, is then selected, of the exact width and contour desired, but somewhat longer than the tooth to be crowned.

This porcelain tooth is now used as a facing to produce an intaglio die of zinc, fusible, Babbitt, or type metal in precisely the same manner as with a Hollingsworth facing. But in using the porcelain facing we must proceed as follows: Take a small wooden pill-box about one and one-quarter inches inside diameter, fill it with Chase's or other molding sand, and level it off even with the top of the box. Into this press the porcelain tooth, pins downward, stopping off any unnecessary undercuts with sand. If the die is to be made of fusible metal, a rubber ring can be used to form the walls, as in the Hollingsworth system, but if zinc, type, or Babbitt metal is to be used, the ring should be of sheet asbestos, fastened with a wire. The porcelain facing should be heated before the hot metal is poured upon it, or bubbles will form on the face of the die. This may be done by heating the head of a flask-bolt, holding it in contact with the porcelain facing with one hand while the other holds the ladle in which the metal is being melted. The metal is then poured and a good die obtained. A pattern to cut the gold by is made from a thin paper card, of such shape that when bent around the tooth it will form one continuous piece with a slight margin for bending over the cutting-edge. The gold, gauge 31, is then cut to pattern. The face of the crown is then swaged up in the die, and the wings extending from each side of the face are bent around with pliers on the model to form the lingual surface, cutting away any surplus gold until proper conformity is obtained. The seam is then soldered, the cutting-edge formed and contoured by bending over the surplus at that point upon the lingual surface. The point of the crown is then soldered and stiffened at the same time by putting sufficient solder inside the crown and flowing it in such a manner as to form a solid strip or body across the cutting-edge about one-thirty-second of an inch in thickness. I use porcelain teeth in molding dies as described, not only for the incisor and cuspid teeth, but also for the bicuspids and molars; and it will be readily seen that this system can be applied to every case where the Hollingsworth or any other system can be used, with the advantage in its favor that the facings and forms that can be selected from it are almost unlimited. In general practice, however, it will be found that a variety of dies, consisting of about six forms of each of the incisor and cuspid teeth, will enable us to cover the usual requirements in crownwork. I would suggest that some of the dental supply houses make a die plate similar to the Starr die

plate, with say six right and six left central incisors and the same number of right and left lateral and cuspid face dies, and place the same on the market. It would then be unnecessary to make our own dies except in special cases.

In soldering gold crowns I use a saturated aqueous solution of borax, made by filling a bottle with water and dropping into it a lump of borax. This is allowed to boil on top of my vulcanizer or elsewhere, and the water will take up a certain amount of the borax, leaving the residue undissolved. An ounce of this solution will last a busy man about a year. In using it the piece to be soldered is simply moistened where the solder is wanted to flow, and the solder will run like a flash, much easier than when the borax powder is used. A very useful help in protecting portions of gold-work from oxidizing while soldering will be found in the use of a solution of yellow ochre of a creamy consistence, painting the parts to be protected. This will be useful also in limiting the area upon which solder is to flow in crown and bridgework. An idea prevails among gold-plate and bridgeworkers that the approximal surfaces of teeth to be soldered should be somewhat separated. In my own practice I fit these surfaces closely together, and also the backings, using not less than a 28 gauge gold, so that in soldering shrinkage of solder is resisted by backing. I commence with a high-flowing solder, using just sufficient to connect the backings and plate or crowns together, following with an easy-flowing solder of the same carat for flushing or finishing.—*Dental Cosmos, May, 1898.*

* * *

CARBONIZED COTTON METHOD. By Dr. Elof Förberg, Stockholm, Sweden. I have to report on a material which has been in use by me the last twelve years as a vehicle for medical applications for the treatment of exposed pulps, as tampon for wounds after extractions, and last but not least, for filling root-canals. The difficulties of finding an ideal root-canal filling are proven by the many different materials which have been recommended for that purpose. It is a variegated medley of the most heterogeneous constituents, from gold "solid to the apex of the root," as the term is, to the aqueous solutions and—the mere nothing!

A material suitable for the filling of root-canals ought to have the following properties: 1. Must be easy to handle, in order to be sure of a perfect filling. 2. Must be a non-irritant. 3. Must be per-

fectly aseptic and easily to be united with antiseptics. 4. Must absorb gases, which in spite of all treatment will develop in the canals. 5. Must be insoluble and not decompose. 6. Must form so solid a filling that filling of cavity can be done right upon it.

The materials commonly used and recommended for the purpose do not, in my opinion, fulfill all these requirements. Gold may certainly be made aseptic, but it is impossible to introduce it into curved and flattened canals. Wood and gutta-percha are not aseptic and they decompose. The cements are irritating and soon dissolve. They are not aseptic any longer than the antiseptics which are added remain there. Cotton is not always easy to be introduced. It is aseptic as long as the antiseptic holds forth, but afterwards decomposes and becomes an irritant.

After years of experimentations to modify cotton in a way to make it insoluble and non-decomposing, I finally obtained in the *carbonized cotton* the material which I was searching for. Carbonized cotton differs in many respects from the hitherto known modifications of carbon. It seems to be a modification between the diamond and the graphite. Like the former it is a non-conductor of electricity and heat: like the latter it hardly burns. Like the charcoal it is a good absorber of gaseous bodies, and excels it on account of its higher porosity. This porous, soft and flexible carbon, by itself a disinfectant, is also an excellent antiseptic, owing to the addition of anhydrous boracic acid, with which every fiber of it is impregnated.

The carbonized cotton was used by me first in the filling of root-canals. All difficulties arising on account of its brittleness and black color were reduced to a minimum after a short time, so that I can say it is excellent for various purposes. The property of carbon to absorb gases and liquids is of importance in the filling of root-canals. All septic masses which may appear in spite of careful treatment are readily taken up by it and made harmless. Carbonized cotton is entirely aseptic and can be brought to a red heat before use. It may be introduced in the canals as such, or combined with any good antiseptic. No irritation ever results within the tooth nor on the surrounding parts. People who use powdered carbon as tooth powder have carried little particles of it in the gums for a long time, not being harmed by it. I myself have filled the abscess sacs at the apex of teeth through the apical foramen with the cotton,

giving no pain whatever, and in only one case it was gradually pushed out through the fistula without inconvenience to the patient.

Carbonized cotton does not decompose nor is it soluble; this is an important quality. It often happens that teeth whose root-canals have been filled with certain cements or pastes cause trouble again, because these materials were washed out after a time. It also can be easily handled. One objection is its black color. The same is disagreeable, but it does not cause any discoloration of the teeth; on the contrary the latter retain their color well, and if the fillings are not extended beyond the gum-line, especially in the front teeth, nothing can be said against it. Discoloration of pulpless teeth is in my opinion caused only by defective treatment. The usual care has to be observed in treatment of the canals before act of filling. My method differs from others in that (1) I make it a point to wash out the canals thoroughly with a fine syringe, alternately pumping and sucking the liquid, and (2) that I use sulphuric ether.

Dr. Callahan proposed to make the finest canals accessible with a 25-30 per cent solution of sulphuric acid, but for the last fifteen years I have used the ether, which was recommended by Dr. Herbst as an obtundent for sensitive dentin. This is prepared in the following way: Some drops of concentrated sulphuric acid are put in a clean bottle, then the ether is added, stirring constantly with a glass rod until the acid is saturated. Any surplus of the ether is evaporated by the chip-blower. This chemical compound is very useful in the opening of narrow canals; it is a good obtundent and an excellent antiseptic. A fine-pointed syringe brings it up in the canals, or long-beaked tweezers can be used. Dip the latter in the ether, push up as far as possible and open a little; the ether will adhere to the walls by capillary attraction. With a nerve broach the canals are then well cleaned, the treatment is repeated and the ether evaporated by hot air. There is no danger whatever in the use of the sulphuric ether; if too concentrated its action can be controlled by a solution of bicarbonate. I may state here that I even used it in cases of pyorrhea alveolaris until I found better results in the silver salts, itrol and actol. In almost all cases the canals can be filled immediately after the application of the ether, but in blind abscesses a temporary filling (for instance Dr. Forssman's formalin cement) is advisable.

After the thorough preparation of the canals the carbonized cotton

is introduced. To facilitate the work the cotton may be moistened with alcohol or 5 per cent solution of carbolic acid; in cases of periodontitis or gangrenous pulps a 10-20 per cent solution of formalin, with or without eugenol, is better.

My method of introduction is the following: A piece of the cotton is taken up with long-beaked tweezers and brought to a glow over an alcohol flame, then dipped in above named solutions and carried up in the canals with a root-canal filler, with a zigzag side movement, which prevents the cotton from slipping. The instrument must be blunt and as large in size as the canal allows. Every piece is to be condensed, and larger instruments can be used farther from the apex. With a piece of spunk the whole mass is pressed in as soon as the canals are flush.

The carbonized cotton does not roll together or stop up the canals as readily as the common cotton often does. Should that happen, however, it can be remedied with a probe. In piercing the cotton with the latter it is pulverized and carried up to the apex. It can be pressed in the narrowest fissures and canals, even in such where one's finest instruments do not go. Any surplus is taken off and the cavity well syringed or washed out with cotton saturated in alcohol. The filling is again condensed with cotton or bibulous paper and any moisture taken out with hot air. Perfect dryness makes the cotton much more valuable. The cavity is now to be excavated and any filling can be inserted directly on the cotton. It is of the greatest importance to close root-canal fillings as well as pulp cappings absolutely hermetically. Our cements are all porous and do not give any satisfaction. Gold and tin, or both together, are the best, but if it is necessary to insert cement or amalgam fillings it is wise to cover the bottom of the cavity with above named materials or with gutta-percha. In front teeth, where the anterior walls are thin, I always line latter with gold to give the tooth a natural appearance.

The carbonized cotton is the best filling material for root-canals of temporary teeth. It can be easily worked in the wide canals, does not irritate, and the saliva cannot change its quality. * * * As a non-conductor it can be used with advantage under metal fillings. * * * As a hemostatic it is excellent. While the common cotton decomposes and often causes secondary hemorrhage in attempting to remove it from the wound, the carbonized cotton does not irritate the tissue in the least. Of course it has to be handled more carefully

to prevent it from pulverizing. But if wound around common cotton and saturated with an antiseptic it works very well. * * * It makes an ideal pulp-capper with some antiseptics dissolved in alcohol.

Together with a solution of 20 per cent formalin and eugenol it is the best material after pulp amputations. Those particles of the pulp left after the amputation, the canals being inaccessible or the patient too nervous to remove everything, do not retain their vitality long. Above mixture devitalizes them quickly and keeps them entirely aseptic. In such cases the rubber-dam has to be put on. If there is any pain it soon passes off. This preparation excels Dr. Miller's bichlorid thymol paste, which also discolors the teeth. Formalin, as is well known, is a splendid article to harden anatomical preparations, preserving their natural color at the same time. This property makes it a splendid mummifying agent. The carbonized cotton being worked in the canals carries the formaldehyd in the canaliculi and stores it up there as a permanent antiseptic and coagulant.

In many cases of diseased teeth, especially in blind abscesses which had been treated by prominent dentists without success, I was able to bring forth an entire cure in a short time with the carbonized cotton method. Such cases prove more than all statistics. I believe, therefore, I can well recommend it as one of the most effective and surest weapons in our efforts to fight the different diseases of the teeth.—*American Dental Weekly, May, 1898.*

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SPECIALISM ESSENTIAL TO SUCCESS. By Allen H. Suggett, D.D.S., Marysville, Cal. Abstract of address to Class of '97, College of Dentistry, University of California. Some one has said that genius is only an infinite capacity for hard work and an unwearied attention to detail. While some of us may not agree with this sentiment and may not believe in the divine spark, which is a gift to the favored few, we all know that it is persevering work that is the necessary power in the accomplishment of any purpose. Perhaps in no profession is careful work and exact attention to detail so important as in ours.

It is a law of nature that all things change. Nothing is the same to-day as it was yesterday. Nothing will be to-morrow as it is to-day. So you will find it in your professional life. To-morrow

you may be a better workman than you are to-day, or you may be a poorer. It depends upon yourself.

Don't be afraid of learning too much. We see gray hairs and bended heads, but seldom from the strain of study or the weight of learning.

Keep in step with the highest professional thought. It is placed easily within the reach of all through our periodicals and by means of the annual meetings of the local dental associations, where we have an opportunity for mutual help and interchange of ideas. This is important. It keeps us out of ruts. It helps us to take a broader view of our work and often furnishes us with ideas that may prove to be of the utmost importance in our work.

We are living in the age of the specialist. The day has passed when you could be a blacksmith and a dentist also. To-day you must be one thing and that thing well. You have received a careful special education and a specialist you must always be. But do not be only a specialist; be something more—be broad in thought. It is an old and hackneyed saying but one having much of wisdom: "Know something of everything and everything of something." If you are an earnest student in your profession you will need to watch yourself that you pay sufficient attention to this "something of everything." Don't be narrow. Don't think dentistry all the time. Be broad in your thoughts, in your interest, in your knowledge; for aside from the symmetrical development of your character it is necessary to your success.

The profession of dentistry has some phases peculiar to itself. It requires so much more than a mere technical education; it requires an almost superhuman power of adaptiveness. In the same day you may be the companion and sole entertainer of doctor, lawyer, schoolgirl, farmer and housewife. You must interest these people. You must while away as best you can the hours of tedious operation. This requires great tact and a close study of human nature. What would divert or interest one patient would annoy another. So a dentist who is quick to perceive or anticipate the tastes of his patients will soon find that this quality attracts patients when better operators, perhaps, have failed to please. The best of education, the widest interest will serve you best in this respect. If you have something worth saying it will serve you better than platitudes concerning the weather. People are attracted by minor things. A

pleasant, attractive office, cleanliness and order are not incidentals—they are essentials.—*Pacific Medico-Dental Gazette, June, 1898.*

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STRENGTH OF VARIOUS MEDICINES. The following table prepared by Dr. A. Gawalowski is of special interest, coming at a time when we are all much interested in the special strength of the several medicines employed in dental practice. Registering sublimate as 100, he chronicles these results:

	Disinfectant.	Antiseptic.	Deodorant.
Corrosive sublimate	100	100	..
Carbolic acid	50	50	40
Sulfuric acid	50	50	50
Thymol	50	50	40
Creosote	50	50	40
Antimony	50	50	40
Sulf. iron	40	50	30
Ferro-zinc-sulf	40	50	40
Iron-oxid	40	10	15
Ferro-zinc-magnesium-sulf.	40	30	30
Cupri-zinc-sulf.	35	40	40
Zinc-phenolate	30	40	45
Sulfur	15	25	25
Potas.-permang.	25	10	50
Salicylate	25	25	25
Lysol	25	35	40
Kreolin	25	25	40
Chlorin gas	15	30	40

Trans. by Dr. B. J. Cigrand from *Zahntechnische Reform*, Apr.'98.

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TO REMOVE ARTIFICIAL TEETH FROM DENTURES. Immerse the plate in boiling water and allow it to remain until the vulcanite has softened, then take it from the water and with pliers remove the teeth. The advantage of this method will appeal to all who wish to avoid the disagreeable odor which comes from the plate when subjected to the flame.—*February.*

COTTON AND CHLORO-PERCHA. Dr. Coucher recommends that small cotton pellets be saturated with a thin mixture of chloro-percha and these pellets form a very convenient protection in cavities containing an application of arsenic. It will also serve a good

purpose in holding the matrix, and is useful in many ways where the pliability of the cotton and the plasticity of the percha is desired.—*February.*

TOOTHACHE REMEDY. The following has been found to be an excellent medication in severe toothache: Menthol, 3–5; ether sul., 7–0: Ol caryophyll 3–5; Extr. fluid aconite 1–5.—*March.*

TO REMOVE DEBRIS FROM PULP-CANALS. It has been an exceedingly successful operation when a ½ per cent solution of ammonia was used. Ammonia in weak solutions is a most efficient remedy in bleaching teeth (when employed in the pulp-chamber) and it frees the dentinal tubuli from foreign matter.—*March.*

TO SET CEMENT RAPIDLY. If it is desired to have the cement set quickly and remain very hard, add a sparing amount of finely powdered borax to the cement powder and the effect is obtained. This method will give good results in bridge-work and in fillings which indicate a quick-setting cement.—*March.*

TO REMOVE IODIN STAINS. Iodin stains can be removed from the fingers by applying ammonia. If the stain be on the lips of the patient, bathe the spot with a weak solution of ammonia. Lunar caustic stains may be removed by painting the spot with iodin and then bathing same with ammonia.—*April.* Translated by Dr. B. J. Cigrand, from *Zahnaerztliches Wochenblatt, 1898.*

IS A VIOLENT DEATH PAINFUL?—Severe injuries to the body are seldom very painful at first. The severity of the nervous shock seems to paralyze the nerve center where consciousness of pain is situated, and in fatal cases there is often no sense of pain, even when death is delayed a day or two. In such cases it may be supposed that the shock not only paralyzes but even destroys the nerve center. It may be compared to a lightning flash along the telegraph wires, which, although of the same nature as the electric telegraph current, yet is so intense as to destroy the receiving instrument, so that no subsequent messages can be received. In some fatal injuries the nerve that would carry the pain to the brain is destroyed, and such accidents are almost painless. Our sense of pain is greatest in the skin, and deep wounds are therefore not more painful than shallow ones. In surgical operations the skin incision is often the most painful part, and those who have been run through the body say they were conscious only of something cold passing through them, with just a prick at the points of entry and exit of the weapon. On the other hand, some fatal injuries are very painful, especially those that interfere with breathing, such as injuries to the chest and throat.—*New York Advertiser.*

Letters.

WHAT IS IT?

To the Editor of the Digest, STREATOR, Ill., July 20, 1898.

DEAR DOCTOR:—In the *Cosmos* for July is a paper entitled "What Is It?" by Dr. J. Foster Flagg. Since reading the article it is still a conundrum. The spirit shown is Spanish, for the author makes a wholesale condemnation of everything, and the words must be Latin, for so many are in italics.

I am surprised that the *Cosmos*, "a scientific journal," would print such stuff, and the writer of the paper must be in his dotage, or else he thinks the readers of the *Cosmos* are nincompoops. Denmark is all right. The trouble is in Swarthmore or Philadelphia. That's "What Is It."

Yours truly, C. R. TAYLOR.

QUERY ABOUT ALLOY.

Dear Dr. Crouse: NEW YORK, July 22, 1898.

I am very much impressed with the value of "Fellowship" alloy, though I am wondering if I have even yet learned to prepare it in such a manner as to get the best possible results.

With such means as you have for testing the material, you should be able to give very reliable directions for its use. It seems to me that all the care you may take in its careful manufacture will count for little if it is improperly prepared by the operator.

Will you kindly write me, stating in detail the method you find gives the best results, or better still, publish same in the DIGEST, so that others may have the advantage of it.

Yours very truly, S. G. PERRY.

REPLY TO QUERY.

Dear Doctor Perry: CHICAGO, July 25, 1898.

I have decided to answer your letter in the DIGEST, as several men have made inquiries similar to yours, and I found while attending various dental meetings during the last two months that while a large number were using "Fellowship" alloy, they were not getting the best results. This was due in almost all cases to two

causes: First, because the dentists were not using sufficient mercury, and the alloy therefore set too quickly for them to properly condense the filling; and second, because the alloy was not thoroughly mixed, that is, was not triturated until the mass was thoroughly plastic. "Fellowship" requires much more kneading together of the alloy and mercury than those in general use, and it also requires a larger amount of mercury than any alloy I have tested. For small fillings the proper proportion is five grains of alloy to seven of mercury, and the same ratio for larger fillings. This amount of mercury will seem large to those not accustomed to using so much, but careful and scientific tests prove the figures given to yield the best results.

How should the alloy be mixed? It does not make much difference whether in a mortar or in the hand, but if the cavity is large a good plan is to first triturate the mass in a mortar and then finish in the hand. It should be rubbed in the palm of the hand and between the thumb and finger until entirely free from granulation. After it is properly mixed a convenient way to handle it is to roll into a rope and cut into suitable pellets, which can readily be picked up and carried to the cavity with pliers. If any of the mix gets too hard before being used, it can, within a reasonable time and without additional mercury, be rekneaded into plasticity between the thumb and finger and then used. This in no way injures its working qualities.

The next important step is to get it well condensed. Where there are not four walls to the cavity the best results will be obtained by employing a matrix. Instruments with as large points as possible, but not too large to carry the material to the remotest corners, should be used; also heavy pressure in condensing each pellet, which should be increased on each succeeding one in proportion to the degree it is set; and the matrix ought to be removed as soon as the amalgam gets well under way of hardening. Then the cervical margins and all remote points not readily reached when the matrix was in place should be condensed with flat or smooth surface instruments and with heavy and persistent pressure; and at this stage of the operation the surplus material should be removed. The quick-setting quality enables you to do all this and to finish the filling at the same sitting.

A word in regard to the micrometer and dynamometer: The first

is invaluable for testing each batch of alloy to make sure that it will not shrink or expand when placed in a cavity. The dynamometer is also very important, as it has enabled me to secure a combination of metals which will yield the least possible flow and the greatest amount of strength. With this instrument I have also been able to prove the proper amount of mercury, and how to pack the mass with the best results. I can now make cubes of "Fellowship" amalgam that will not change their form 1 per cent in an hour under 60 lbs. pressure, and that will require a stress of from 300 to 500 lbs to crush. Before I ascertained the proper way to mix and pack however, the flow was from 3 to 5 per cent, and the blocks would break under stress of 200 lbs.

Next to shrinkage this characteristic of flow is the cause of most of the defects in amalgam fillings. There used to be a theory that amalgam when placed in teeth had a spheroidal tendency, and the bulging and change of position of fillings was accounted for in this way; but as a matter of fact it is the force in ordinary use which changes the form of the fillings. When preparing cavities for amalgam it should therefore be borne in mind that it is not so strong as gold, and this tendency to move out of position makes it very important to anchor the filling more thoroughly than if gold were to be used. All remote recesses should be carefully filled, otherwise these thin points are liable to bulge or break away under ordinary use.

I have made my reply to your letter somewhat longer than I had intended, but this subject is not generally understood, and I hope to secure a full discussion of it.

Yours very truly, J. N. CROUSE.

PHILADELPHIA LETTER.

Dear Digest: PHILADELPHIA, July 20, 1898.

The Pennsylvania State Dental Society held its meeting this year at Ebensburg, a few miles from Cresson Springs. Philadelphia turned out in goodly numbers, one of our most gifted townsmen, Prof. Wilbur F. Litch, being the president. Dr. Litch's address was most excellent from every standpoint and was no doubt the finest literary production to which the society has ever listened. After speaking of the advance and growth of the profession, of the broadening of the educational systems, of the raising of the stand-

ards for graduation and other matters purely professional, he paid an excellent tribute to the policy of our government in its national trials and noble work. He alluded to the unanimity of feeling and support of the president in his trying office, and recognized the fact that all lovers of peace believed with our worthy president that a vigorous prosecution of the war is the quickest and surest way to end it. The general tenor of the whole address was for peace and a unanimity of feeling in all things whether professional or otherwise. It was voted by the society to have two thousand copies of this address printed and distributed among the dentists of this state and vicinity.

The tendency of the papers and discussions seemed to run to the prophylactic treatment in dentistry; last year we remember everything was cataphoresis. The clinics were of a superior order and were much enjoyed. This was largely through the efforts of the chairman of the clinic committee, Dr. G. L. S. Jameson.

It so happened that the mayor of Ebensburg, Dr. Richards, is a well-known dental practitioner, a graduate of the old Pennsylvania College. The people of the town were very hospitable and seemed pleased to entertain, as they expressed it, such a "gentlemanly body of men."

A valuable move was made by Drs. Jameson and Guilford to have a sum of money appropriated to meet the expenses of clinicians and essayists who might be brought from outside of the members. One hundred and fifty dollars were set aside for that purpose.

The attendance was not so large as usual, which was partially due to the meeting being held at an inaccessible place, and partially because several members were called to other duties. We especially missed the genial presence of Drs. C. N. Pierce and James Truman, both of the salt of the profession.

Many of us expect to go to the National Association to be held in Omaha next month. We anticipate a long journey but hope for a profitable meeting.

Philadelphia for some reason has had the name of being slow and prosy, but we are glad to know that it is gradually growing out of this reputation. In fact in many respects we are now becoming real hustlers, putting even Chicago to shame. For instance, here is one of our medical institutions starting a dental department; said department having been in existence a little over one year, and

in that time it has had the distinction of having had three faculties! Think of it. Two have resigned and now the third is announced as ready to guide the institution through its second year. We say announced, meaning we have been treated to long reading notices in the daily papers of this city of the great ability of each faculty. This institution, by the way, seems to be on very good terms with the press, securing a great deal of "gratuitous" advertising.

Mr. Presley Blakiston, senior member of the well-known scientific publishing firm, P. Blakiston, Son & Co., is dead. The business, which is a very large one, is left entirely to his son, Mr. Kenneth Blakiston, and will be continued under the old firm name. This genial and energetic young man has in fact been the moving spirit in the business for some years and he has our best wishes as he formally takes the reins into his own hands.

Cordially, THE SPECTATOR.

BALTIMORE LETTER.

Dear Digest: BALTIMORE, July 19, 1898.

Local dental affairs are extremely quiet in Baltimore. Our state society has held its business meeting, and the newly elected president, Dr. M. G. Sykes, of Ellicott's City, is worthy of the honor and will ably fill the office. He is appreciated at home, having been mayor of the town and prominent in its social and economic counsels. We are glad to see the country members coming to the front. Dr. Richard Grady, as recording secretary, is a veteran who has been in retirement for some time. No better secretary could be found, and we predict that his department will not lag in the year to come.

We can see since the organization of the union meetings that local dental politics have been on the wane, and this is extremely gratifying. Surely nothing is more humiliating and disgusting in an organization effected for professional and scientific advancement than the injection into its management of men whose ideals and methods are those of the peanut politician and ward-heeler. Such bodies expect their presiding officer to represent all that is best in the association, and not simply the successful tactics of political management in the matter of election. He should be capable and experienced—not as clinician but as a president. Individual preference and ambition should not be considered when the weal of the whole

membership is at stake. Local societies are not the only ones which have suffered in this respect. Presiding officers are not made in a day, and a thousand years would be far too short to make good ones of some we have seen wielding the gavel in high places.

Considerable interest attached to a trial before a magistrate last week, involving the adjustment of a claim for professional service by a prominent dentist against an equally prominent and very bombastic lawyer. The claim of a very moderate fee for some bridgework was disputed because discomfort followed its introduction; which discomfort the claimant had no opportunity to alleviate, his patient having sought other services. The second dentist appeared on behalf of the defendant. The weight of evidence and the expert testimony satisfied the justice that the claim was equitable and the dentist got a verdict.

Those who attended the trial could but be struck (not pleasantly to be sure) with some features and incidents. The effort to cheapen professional services, to weigh them by mercantile standards, was so persistent as to incite a revolt in the ranks of the experts. The statement on the part of the defendant that he had no regard for dentists socially, that he did not consider them his equals in any sense, must have sunk deep into the little soul of the man who so far forgot himself as to appear against his professional brother, and for what? Possibly the paltry fee collected from the doughty client.

Oh, for a scalpel to lop off some of the warty excrescences, some of the fungus growths that have fastened themselves upon the dental profession, whose protoplasmic elements have developed into giant cells of selfishness and avarice, in whose papillary meshes there is no opportunity for the development of the first growth of brotherly kindness and professional sympathy. Paris-green kills potato bugs; wonder what it would do to these things. I have heard men say that at times they have been ashamed to acknowledge they were dentists. I have never experienced this mortification, but I frequently feel indignant at the thought that my measure may be taken by such a yardstick.

Slowly but surely dentists are growing into the respect and esteem of the general public; slowly but surely dentistry is taking its place among the liberal professions; and what is better, still slowly but surely men are developing in the dental profession who will demand

the respect and command the assistance and cooperation of the scientific and cultured in all the walks of life. Men broad, scientific, cultured enough to brush away the flies and vermin that have collected on the body professional; men sufficiently conscientious to act well their part without respect to personal honor or credit, but whose efforts will bring honor and credit inevitably, not to them alone but to their profession also. Of such is Chas. S. Tomes, whose appointment to the medical council of England has widened his scope of general usefulness and broadened his opportunity to fix upon the people the importance of his specialty. The individual may die and his effort cease, but the impulse which secured his appointment will not be lost. Dentistry has permanently and securely fastened itself upon the counsels of a great city.

The little spurt at legislation to get dentists in the army and navy should teach some lessons. The measure as introduced was very crude and no one seemed to know of it until it had been killed in committee. After this the appeals of the journals to the profession to cooperate were too late. Some were made even after Congress had adjourned. Now, if it is really desirable to have dentists in the army and navy, it is not an impossible thing to accomplish. A little organization, a long pull, a strong pull, and a pull altogether and the task is done. Let the National act, and let those to whom the task is entrusted be those who will do the work, for it will take work.

Cordially, ORIOLE.

NEW YORK LETTER.

To the Editor of the Digest, NEW YORK, July 16, 1898.

MR. EDITOR:—Independent journalism—England has it in *The Dentist.* Nothing half so interesting has before come from England. They are having good social times over there in their dental meetings and are giving us fine views of the city of Bath, where the meetings were held.

Mr. Tomes is emphasized by an appointment on the Medical Council, and they seem to think over there that it will elevate dentistry. That used to be the idea here, but it looks as though the profession is beginning to find out that the elevation must come from the dentist pure and simple.

We learn that the English dentists have a benevolent fund. This seems a good idea. What say you, members of the National?

The Dentist tells us that Fouchard, honorably known in France, had in 1700 an appointment as dentist to the marines, but he did not receive much attention from the physicians. How about such appointments in our army and navy? There never has been such an opportune time to present the matter as now.

Is the dentist a surgeon? The following is taken from *The Dentist*, and is part of a report of a meeting of the general Medical Council of London:

Dr. McVail said he had intended to move to remit the report back to the committee, so they might consider and report as to how far the medical and surgical examination of dental students should correspond to the education and examination required in the case of medical students. He thought the time had come to consider what was to be the real position of the dentist in the future. Was the dentist still to be a man of inferior medical and surgical training with a few specialisms, or was he to have knowledge such as the members of the medical profession had, with dental knowledge in addition? His own impression was that the time had now come when the dentist ought to be a surgeon, when he ought to have a knowledge of surgery as complete as the person going into the practice of the profession in the ordinary way. He thought the dental profession ought to be elevated and ought no longer to consist of men who had an imperfect education in medicine and surgery. Although they had a separate register, dentists were, after all, members of their profession, and he was glad to think that other members of this council were beginning to take this position.

Mr. Tomes said that every day in the practice of a dentist the knowledge of general pathology came in. Hardly a day would pass, if the dentist was in a large practice, without his seeing and having to form an opinion upon a case which was on the borderland where he hardly knew whether the trouble was local or constitutional.

The Review has a few things worthy of our notice. First, the report on dental literature. Does Mr. Tomes give sure instruction on retaining pits for fillings? That may be English, but seems American. Second, is amalgam a poor filling anyway? We trust not. Third, Dr. H. S. Nash has not yet published two volumes on

pyorrhea; neither is the title "P. A." He emphasizes "Idiopathic Alveolitis," yet does not know that this will prove the best term. We think many men fail to give attention enough to enable them to make an intelligent criticism or even to do justice. If we had followed our first impressions regarding Dr. Nash's book we should have severely condemned it, but after reading the book several times we began to see light emerging from the great obscurity formerly caused by prolific writers. We know that this book has already put our feet on firmer ground than ever before, so far as getting at the true etiology.

Now here is something that will stir us with pride; one of our American practitioners abroad has at last solved the vexed problem of porcelain inlays. Dr. Jenkins of Dresden has rounded out years of work by a six weeks' sojourn in the Bohemian Mountains among the porcelain bakers, and has built a laboratory on the grounds of his chateau and gone to the root of the matter. His productions are something in art work which can hardly be conceived of. To be sure, it is not cheap work; but the expense will not stand in the way of men of high attainments. This idea will obviate much hard labor for patient and operator, and reduce the number of fillings. We congratulate Dr. Jenkins, and hope he may be richly rewarded for his labors.

Those who are familiar enough with porcelain inlay work to speak intelligently, tell us that the lack of integrity of the cement is what causes failure. This is probably true, for we see the various cements have not proved impregnable to dissolution under all conditions. The absolute success of this work therefore depends partly upon the chemists, and let us hope that they will act in the matter. Great things are being done with amalgam, why not with cement?

We shall be glad to have some reliable information concerning Omaha and its possibilities for a successful meeting of the new National Association, and Dr. Crouse is certainly the man to spy out the land. Already there are signs of "death in the pot," which only the olive branch can neutralize. There will never be a truly representative scientific body until the membership is based upon scientific productions.

We do not often get a respite from our office in June, but this year was an exception. A call came to us, and for the third time we visited Cazenovia, the native town of the late Dr. William

H. Dwinelle. It is a most beautiful place and we have described it in a previous letter. The venerable Dr. Phelps, successor to Dr. Dwinelle, is still in practice at 83. He showed us around the little office building first occupied by Dr. Dwinelle. Among the curios he showed models of facial deformities corrected by Dr. Dwinelle a half-century ago. Would it not be a graceful thing for about one hundred of us to send one dollar apiece to S. G. Perry, of New York city, so that a becoming slab shall mark Dr. Dwinelle's resting place?

Syracuse has formed a city society and is drawing members from the surrounding towns. The well known and much honored S. B. Palmer is one of the founders. Nothing like the fellowship arising from scientific and social dental meetings in city and town, for men enlarge under its influence.

Dr. George E. Greene in the June DIGEST takes up the subject of the "Non-graduate Practitioner." Although we have more than once advocated this course, we are inclined to save our energies for something that gives more promise of good results, and this could hardly be accomplished.

We are glad to see that Dr. Cigrand agrees with us that the operation of extracting a tooth belongs to the field of oral surgery. This we claimed in the case of Dr. Riggs, when he removed a tooth from Dr. Wells under an anesthetic, thereby making it the first surgical operation under an anesthetic, and thus giving double glory to our calling.

The death of Dr. Southwick of Buffalo takes away a conspicuous member of our calling, for his association with electrocution gave him no little publicity. It seems that he was the first person who called the attention of the state authorities to the fact that life could be made extinct by electricity, and they then came to adopt the plan of electrocution.

Rumor says that Dr. Davis, a prominent dentist of New York, was lost on the ill-fated French steamer. We have met him in his office and found him to be a gentleman of very pleasing manners and appearance.

New York has enjoyed lovely weather for some time, but just now it is sizzling. The news from Santiago will help us to keep cool, and as for "walking Spanish," let the other fellows do that.

Cordially, NEW YORK.

NEW JERSEY LETTER.

ASBURY PARK, N. J., July 23, 1898.

To the Editor of The Digest,

MR. EDITOR:—The twenty-eighth annual meeting of the New Jersey State Dental Association has come and gone and its history is recorded. In session from Wednesday the 20th at 10 o'clock until Friday the 22d at 1 o'clock, a mass of business, papers and discussion was gotten through with which, considering the warm and sultry weather we had, was a wonder to the thinking man. Unfortunately several of the essayists could not be present and their papers were read by members of the association. It so happened, however, that these papers all called forth considerable discussion to the profit of the convention.

The paper of W. J. Wallace, M.D., Glens Falls, N. Y., on "A Few Homeopathic Remedies in Dental Practice," brought forth the old subject of dentistry being a specialty of medicine and the rights of dentists to give systemic treatment.

Dr. A. R. Lawshe of Trenton, N. J., presented "A New Sectional Block Tooth." This paper advocated making the countersunk tooth to the gum section, and was commended.

Dr. F. N. Gregory of Newark, N. J., in his paper advocated the extraction of the tooth and then replanting it in severe and stubborn cases of alveolar abscess, where other treatment fails, and in molars having exposed pulps difficult to extirpate.

Dr. I. P. Wilson of Burlington, Iowa, whose paper was "A Study of the Physiological and Pathological Conditions of the Apical Portion of the Cementum," deprecated the use of arsenic for devitalization where the application is made more than once. Dr. J. F. Flagg took issue with him on the arsenic question. The paper was an admirable one and instructive throughout.

Dr. J. A. Waas, Hammonton, N. J., who wrote on "Experience with Pulp Mummification," presented a number of cases where for three years this method had been entirely successful. The discussion on this paper was extended, and the concensus of opinion seemed to be adverse to the treatment described so long as other and well-tried methods could be employed. It will take longer than three years to demonstrate its success or failure.

H. H. Merrell, M.D., Chicago, wrote on "A Plea for a More Sci-

entific Study of Materia Medica as a Branch of Dental Education," and very ably set forth the necessity of the desirability for more extended study on this subject.

Dr. H. C. Register of Philadelphia presented a very interesting paper on "The Relation of Vegetable and Animal Life, Nutrition, the Influences Mutually Exhibited, and Their Application to the Mouth and Teeth."

Dr. Wm. H. Trueman of Philadelphia read an article on the "Evolution of Dental Materia Medica." This paper was masterly and was presented as only Dr. Trueman can do it, making a very interesting essay out of an ordinarily dry subject. The wish was freely expressed that Dr. Trueman should write a history of dentistry, a task he is so abundantly able to fulfill.

The clinics on Thursday afternoon were numerous and praiseworthy, and showed many novel methods of operating. The attendance at the convention of members and friends was more than the average. Its influence and impression on the profession will be felt when the proceedings are published.

The election of officers resulted as follows: Pres., J. Allen Osmun, Newark; Vice-Pres., Wm. E. Truex, Freehold; Sec'y, C. A. Meeker, Newark; Treas., H. A. Hull, New Brunswick. Ex. Com., Oscar Adelberg, Elizabeth; R. M. Sanger, East Orange; F. E. Riley, Newark; F. E. Gregory, Newark. Membership Committee, F. L. Hindle, New Brunswick; W. L. Fish, Newark; C. S. Hardy, Summit; C. W. Hoblitzell, Jersey City; W. H. Pruden, Patterson. Dr. F. C. Barlow, Jersey City, was recommended to the Governor to succeed himself as a member of the examining board.

Some one inadvertently left in the hotel a circular issued by the National Association of Dental Examiners to its members, calling for a vote of the various states as to their wish to have the annual meeting of the association changed from Omaha to some other place and date. The reasons for such a change were fully set forth, among them being the insufficient accommodations at Omaha and the probability of a small attendance of the examiners at that place.

The committee on colleges also raised the following objections: The probable settlement of the primary education problem; the desirability of meeting after the Faculties have debated this subject that a little of their wisdom and action might be obtained; that the Faculties be first to deal with this matter from their present knowl-

edge; that the possibility of an open conflict between the Faculties and Examiners be avoided; the convenience of Washington and the month of October; the fact that the college announcements will not be issued until August, and the consequent impossibility of the committee to digest and report on them earlier than October; the delay in getting necessary information by the committee, which can be had by October; the necessity of meeting not later than that date, that the Examiners' official list of recognized colleges may be furnished to the various boards for their fall meetings.

The cities of Washington, Chicago and Louisville are named for selection and the time the early part of October.

Cordially yours, HORNET.

SECTIONAL BRANCHES.

PASS CHRISTIAN, MISS., July 16, 1898.

To the Editor of the Dental Digest,

MR EDITOR:—In the May issue I note an editorial entitled "Sectional Branches," in which you admit "a lack of full comprehension of what is expected to be accomplished," and express a desire to see "a well-defined plan of the workings of these branches." You also question as to the character of the membership of the branches. Having by the good-will of my confreres been placed in a position necessitating a careful study of these among other points, I beg to offer the following as a partial solution of the problem.

First, as to the membership of the branches: When the National Dental Association was formed, it took as a nucleus for its membership the then existing membership of the American Dental Association and of the Southern Dental Association, as seen by the following extract from the constitution, Art. III, Sec. 5:

Special Members. It is hereby specially provided that all persons at present permanent members of the American Dental Association and of the Southern Dental Association are permanent members of this association and entitled to all the privileges of the class to which they belonged without further action, and the treasurer is hereby directed to transcribe their names upon the roll of membership of this association.

The twelfth standing resolution further provides "that all members and officers of the American and Southern Dental Associations hold the same relation to the National Dental Association as they

did to the former associations." As to the nucleus of the Southern Branch, I quote part of a resolution offered by Dr. J. Y. Crawford and adopted at the final session of the Southern Dental Association, August, 1897—"I move that we do now declare ourselves the Southern Branch of the National Dental Association."

Increase of membership is provided for in the National Constitution by Sections 2, 3 and 4 of Art. III, which form the same portions of the constitution of the Southern Branch. It is thus seen that the Branch, as well as the National, makes permanent members only of delegates, and receives delegates only from state societies. The restrictions placed upon delegates and permanent membership in the Branch are identical with those of the National, Art. IV, Sections 1, 2 and 3 having been incorporated unchanged, and with the same numbering, in the constitution of the Branch. In place of Section 4, however, the Branch substituted the following wording—Art. IV, Sec. 4. "This association will receive as delegates only graduates of some reputable dental or medical college, or those who entered the profession prior to September, 1875." In short, the conditions of membership in the Branch are and necessarily must be the same as in the National, because, as I have said elsewhere, election to membership in the Branch confers membership in the National. Art. V. of the Branch constitution is identical with Art. V. of the National, except that in Section 5 "Committee on Grievances" is substituted for "Executive Committee." Section 7 of Art. XIV. of the National Constitution is incorporated as a part of Section 7 of Art. V. of the Branch Constitution on "Duties of Treasurer." Among his other duties, "The Treasurer must pay over to the Treasurer of the National Dental Association three-fifths of the dues paid in by the members, the remaining two-fifths to remain with the Branch to defray its expenses."

The plan of receiving delegates from state societies only, instead of from local societies and colleges also, will probably work all right when it is properly understood, and need not materially "change the character of the membership." It will, however, be necessary for members of college faculties and local societies to join the state societies in order to come into the National and the Branches as delegates, which is exactly what is desired, namely, to build up the state societies. After becoming "permanent members," however, as provided for in Sec. 2 of Art. III of both constitutions, it is not

obligatory to retain membership in the state society, Sec. 3, Art. IV, providing for methods of dealing with individuals who are members of the National but have no membership in any local body. The number of delegates will unfortunately not be so great this year as in the future, since some state societies had already held their regular annual meeting without electing delegates, before the officials of the National became thoroughly awakened to the fact that the general body of the profession did not understand the elective-delegate system. It is quite a common misapprehension that delegates can be "appointed" at any time. In time, however, they will become familiar with this feature, unless some of the red-tape restrictions should be removed. In this division (the South) five of the state societies had held their annual meetings without any effort whatever having been made by the officials of the National to have delegates elected. And right here I can point out one useful thing that the Southern Branch has done, namely, seeing that full lists of delegates were elected by three of these state societies, not only to the Branch, but also to the National. The other two of the five states referred to had met before the installation of the present officers of the Southern Branch. I think that the above will enlighten you as to the membership of the Branches.

As to whether they will be "a benefit or a hindrance to the National organization," it is difficult for me, individually, to conceive of any way in which a Branch could prove a hindrance. Every member of the Southern Branch is also a member of the National; the Branch contributes three-fifths of its income to the National; the members of the Branch receive the Transactions of the National, thus increasing the audience, and many of them will doubtless attend the meetings of the National; they swell the roll of membership; they contribute to the archives; they contribute more financially to the National than they do to the Branch. The Branch will be a stepping-stone for many from the Southern State Societies to the National, as the state society is a stepping-stone from the local societies to the Branch and the National. The constitution of the Southern Branch does not provide for any kind of membership which does not include membership in the National, therefore every member of the Branch is and always will be a member of the National, and as such interested in building it up in every way. How then can the Branch prove "a hindrance?"

Each annual meeting being held in a different section of this division, the Branch will do a great deal of missionary work in developing the dental profession in the South and in securing new members for the National. The increase of membership in the National from the division known as the South will annually be about double what it would be without the Southern Branch, as each Southern Dental Society elects twice as many delegates as it otherwise could—that is, delegates to the National and delegates to the Branch. Despite the fact that the Southern Dental Association took an active part in the formation of the National, there are in this division, as in others, men who will not travel great distances to attend the meetings of the National, and who would not send their dues when not attending, but who will attend the Branch because nearer home, and thereby contribute to the support of the National, and who will meet with the National when it comes within their division, when the Branch will not have any conflicting meeting. Love for the old Southern Dental Association will long live in the Southern heart, and while the Southern Branch is accepted as a substitute, without it the void would be unbearable.

Yours truly, WM. ERNEST WALKER.

HUTCHINSON'S TEETH are seldom seen in the milk teeth of children.—*Graham.*

ONE grain of the bichromate of potassium dissolved in four ounces of water, a teaspoonful every two or three hours, will be found to give relief in loss of voice, hoarseness, and in bronchial coughs.

FOREIGN BODY IN THE AIR PASSAGES.—Nordman describes his experience when summoned to a child dying of suffocation from having "swallowed something." All efforts to find the foreign body were in vain. Tracheotomy was performed without results and respiration had ceased, although the heart was still beating. Artificial respiration was kept up with frictions and injections of ether until more than an hour and a half had passed, when suddenly a small balloon appeared at the tracheal opening, having been distended and forced upward by the artificial respiration. It was easily extracted and found to be one of the toy whistles consisting of a wooden part, 2.5 cm. by 8 mm., and a small balloon 2.5 cm. by 2.5 cm., which had lodged beyond reach in the right bronchus.—*Journal de Med. et de Chir.*, Oct. 25. Another case is reported in which the child had inspirated a smooth slender glass object, but instead of performing tracheotomy as indicated, Bonnus attempted intubation first. In a few moments the object was expelled in a fit of coughing, a new and suggestive application of intubation.—*Presse Med.*, Oct. 30.

The Dental Digest.

PUBLISHED THE

TWENTY-EIGHTH DAY OF EVERY MONTH.

Editorial.

J. FOSTER FLAGG—WHAT IS IT?

Since reading the remarkable effusion of our italicized friend in the July issue of the *Dental Cosmos*, we have been much puzzled as to why Editor Kirk, being a scientific man himself, and recognizing the value of original investigation, has allowed such (Let us be charitable) amusing language to appear in his journal. We cannot believe that he has run short of material, and so are forced to the conclusion that, smarting under the criticism that "the *Cosmos* is too scientific," with the able assistance of Dr. Flagg he has gone in for comic literature. If so, we congratulate him on the initial effort, and hope that our commendation will stir his mountebank collaborator to still more extravagant vagaries.

NATIONAL DENTAL ASSOCIATION.

The first annual meeting of the National Dental Association will convene at Omaha, August 30, 1898, and continue in session four days. As this is the first gathering of the new body, we hope every one who desires it to be a great organization will attend the meeting this year. Carping criticism to the contrary notwithstanding, the power for good of the American Dental Association was very great, and its influence was widespread. If this new body fulfills its mission it will be a much greater organization and accomplish a great deal more than any which has gone before, and it is sure to be the medium for valuable work if we have the united interest and cooperation of all the societies in this country. Let the first meeting be the initial step in improving society work.

As there was some apprehension felt concerning proper hotel accommodations, we went to Omaha this current month to see what the prospects were. We have made arrangements for ample hotel accommodations and an excellent meeting place, and there need be

no fear in this regard. The hotels will give reduced rates, and while the railroads have made a special rate on account of the Exposition, we are endeavoring to have them reduce it still further.

THE NATIONAL ASSOCIATION OF DENTAL FACULTIES.

This important organization will soon convene at its annual meeting, and the proceedings will be watched with unusual interest because of the action taken last year, which did away with the promised increase of qualifications for admission to the dental colleges of the land. The future usefulness of the Faculties' Association will depend upon whether advanced steps are taken, or whether it continues to retrograde and to admit such students as are entirely unable to ever become good dentists. We hope that the ground lost last year will be regained and that a high standard of matriculation will again be established. Besides this, there are other problems being agitated by the thinking minds in the profession which should be considered by the Association this year.

In the last number of this journal we made the statement that "There are at present more practitioners of dentistry than can make an honest living, yet the number of colleges is on the increase, larger classes than ever before have been graduated this year, and that means that more young men have been turned into an already overcrowded field. This wrong will be increased in proportion to the number of schools and the laxity of the requirements." If this proposition is true, and we think it is, the Faculties' Association should make its work more extensive, and not only require certain knowledge on the part of the prospective student, but in some way make sure that the faculties of the various colleges are composed of men fit for so important a work as teaching. The larger the Association gets, the more difficult it will be to control in the interests of raising the standard.

There is a rapidly spreading belief that the dental colleges are not conducted in the interest of the profession; that they are run to make money regardless of consequences; that selfishness is the ruling motive, and that for these reasons the dental colleges as a whole are detrimental to our best interests. If these complaints were but the murmurings of the grumbler, or the talk of the gossiper, we should not discuss them here, but they emanate from too large a class of earnest, honest practitioners to go unnoticed.

While we have the greatest respect and confidence in the honesty and ability of most of the leading men connected with our schools, yet on account of the criticisms mentioned and the proceedings last year, which let down the bars for no other purpose than to get larger classes, we feel much uneasiness as to the work and good to be accomplished by the Faculties' Association. At the coming meeting the ground lost last year should be regained and other greatly needed reforms should be established. If the honest colleges which desire a higher standard continue to be outvoted by the schools which care nothing for it and aim only to make money, they will surely have to call to their assistance the National Association of Dental Examiners, which has the legal authority to prescribe what shall constitute a reputable college.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

It seems to us that the power of this body for good has not yet been realized to the full extent of its possibilities. With the decision of the courts in its favor, what is most needed is a well defined and organized plan, vigorously executed. We hope each state board will send its ablest representatives to the meeting of the National organization with some well defined ideas for its future good. With the majority of the state laws recognizing holders of diplomas from reputable dental colleges as proper persons to practice dentistry, the importance of having a competent examining board to ascertain and prescribe which of the great number now issuing diplomas should be recognized as reputable is all important.

To be thoroughly effective, the Examiners' Association must be well organized and prepared to enforce its requirements; furthermore, a form of law should be devised which will be suitable for all the states, since at present the different laws vary so greatly that universal good government is difficult of accomplishment. The laws of some states regard diplomas from reputable dental colleges as sufficient evidence of qualification, while others do not recognize any diplomas, at least not those of colleges outside the state, and in order to practice the applicant must pass an examination before the state board of dental examiners. The first state to pass such a law was Massachusetts, and it has been in successful operation long enough to judge somewhat of its efficiency. We are not sufficiently familiar with either method to judge which is the better, but from

what we can learn, the one requiring examination is more effectual in securing to the community a better quality of practitioners. It goes without saying that the wise and faithful enforcement of the law is always essential.

With representatives from each examining board at the meeting of the National organization, they should be able to secure complete and reliable information concerning the workings of all the different laws, and to form such an one as would be acceptable to all the states, thus lessening the labor necessary for the conscientious enforcement of the proper requirements of the practice of dentistry. To this end each college faculty and state examining board should exert their energies, and in so doing they will have the support and commendation of the best men in the profession.

Notices.

BI-STATE DENTAL MEETING.

The bi-state dental meeting of the northern Indiana and southwestern Michigan Dental Association will be held in Elkhart, Ind., September 21 and 22, '98. This meeting promises to be one of unusual interest and profit, and all members of the profession are cordially invited to attend. F. P. ADAMS,
Sec'y Northern Ind. Dental Association, Elkhart, Ind.

MINNESOTA STATE DENTAL ASSOCIATION.

The fifteenth annual meeting of the Minnesota State Dental Association will be held September 6–8, 1898, in the Endicott Arcade Building, St. Paul. A good program and time are assured and everyone will be welcome. Reduced rates have been granted on all railroads in the state on account of its being state fair week. H. L. CRUTTENDEN, Sec'y.

MISSOURI STATE DENTAL ASSOCIATION.

The following officers were elected at the recent meeting of the Missouri State Dental Association at St. Louis, June 7, 1898: Dr. F. M. Fulkerson, Sedalia, Pres.; Dr. F. F. Fletcher, St. Louis, First Vice-Pres.; Dr. W. L. Reed, Mexico, Second Vice-Pres.; Dr. B. L. Thorpe, Billings, Cor. Sec'y; Dr. H. H. Sullivan, Kansas City, Rec. Sec'y; James A. Price, Savannah, Treas. Board of Censors: Dr. R. E. Darby, Springfield; Dr. Fred Franklin, Kansas City; Dr. J. E. Megraw, Fayette. Committee on Ethics: J. G. Harper, St. Louis; J. F. McWilliams, Mexico; J. T. Fry, Moberly. Committee on New Appliances: Dr. J. D. Patterson, Kansas City; Supervisor of Clinics: Dr. C. L. Hungerford, Kansas City. Committee on Publication: Dr. J. H. Kennerly and Dr. Wm. Conrad, St. Louis. B. L. THORPE,
Cor. Sec'y, Billings, Mo.

NORTHERN IOWA DENTAL SOCIETY.

The Northern Iowa Dental Society had at Waterloo, July 5–7, 1898, the best meeting in its history and received twenty new members. Drs. A. H. Peck and J. H. Prothero of Chicago were present and added much of value and interest. The officers elected for the ensuing year are: Dr. A. N. Ferris, Waterloo, Pres.: Dr. G. H. Belding, Calmar, Vice-Pres.; Dr. W. R. Clack, Clear Lake, Sec'y; Dr. W. T. Knapp, Charles City, Treasurer. The next meeting will be held at Clear Lake, the first Tuesday in September, 1899, and continue three days.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The annual meeting of the National Association of Dental Faculties will be held at the Mercer Hotel, Omaha, Neb., beginning Friday, August 26, at 2 p. m. It is hoped that all members of the association will be present at that time.

The executive committee will meet the preceding Thursday at 2 p. m. Colleges are notified to present their business at the first session of the committee. By order of B. HOLLY SMITH, Sec'y.

JONATHAN TAFT, Chairman Ex. Com.

HARVARD DENTAL ALUMNI ASSOCIATION.

The association observed its second alumni day June 27, 1898, and about one hundred and fifty visitors were present. The work of the three classes of the school was shown, and many patients were present from all departments, giving evidence of what has been done the past year.

The twenty-seventh annual meeting and banquet were held at Young's Hotel, Boston, Mass., when ninety-three sat at the table. The speakers of the evening were Rev. Edward M. Taylor, D.D., Prof. Eugene H. Smith, Prof. Fillebrown and Harry L. Grant, A.B., the latter of whom spoke for his class of '98.

The following officers were elected for the ensuing year: Frederick Bradley, '86, Newport, R. I., Pres.; Edwin C. Blaisdell, '88, Portsmouth, N. H., Vice-Pres.; Waldo E. Boardman, '86, Boston, Mass., Sec'y; H. S. Parsons, '92, Boston, Mass., Treasurer; Waldo E. Boardman, '86, Wm. P. Cooke, '81, P. W. Moriarity, '89, Executive Committee. The council is composed of the above officers. WALDO E. BOARDMAN, Sec'y.

LATEST DENTAL PATENTS.

605,835. Electrolytic production of amalgams, etc., Emile and G. Andreoli, London, England.

605,974. Dental chair, Frank Ritter, Rochester, N. Y.

606,198. Dental base plate, Warren R. Evans, Portland, Maine, assignor to S. S. White Dental Mfg. Co., Philadelphia, Pa.

606,338. Disinfecting apparatus, Francis Gizzi, New York, N. Y.

606,446. Fumigator, Joseph T. Commoss, New York, N. Y.

606,460. Dental matrix retainer, James W. Ivory, Philadelphia, Pa.

606,456. Dental mouth mirror, Charles Harnden, Bowmanville, Canada, assignor to J. W. Ivory, Philadelphia, Pa.

606,755. Dental engine handpiece, Arthur W. Browne, Prince's Bay, N. Y., assignor to S. S. White Dental Mfg. Co., Philadelphia, Pa.

606,781. Dental jaw-brace, Robert L. Halperin, Chicago, Ill.

DESIGN.

28,934. Dental separator, Henry W. Gillett, Newport, R. I.

TRADE-MARKS.

31,681. Dentifrices, Hall & Ruckel, New York, N. Y.

31,758. Disinfectants, germicides, or deodorizing compounds, Henry S. Blackmore, Mount Vernon, N. Y.

31,759. Antiseptic medicated soap, Charles I. Hood, Lowell, Mass.

(List furnished by John A. Saul, patent attorney, Washington, D. C.)

LIST OF COMMITTEES FOR THE JOINT MEETING OF THE SOUTHERN BRANCH OF THE NATIONAL DENTAL ASSOCIATION AND THE LOUISIANA STATE DENTAL SOCIETY.

No. 1. Committee on Arrangements, in subdivisions. *Transportation Committee:* Dr. Joseph Bauer (S.B.N.D.A.), Chairman, New Orleans, La.; Dr. Jules J. Sarrazin (S.B.N.D.A.), New Orleans, La.; Dr. C. L. Alexander (S.B.N.D.A.), Charlotte, N. C.; Dr. Ed M. Kettig (S.B.N.D.A.), Louisville, Ky. *Hotels and Quarters Committee:* Dr. J. Rollo Knapp (S.B.N.D.A.), Chairman, New Orleans, La.; Dr. Joseph Bauer (S.B.N.D.A.), New Orleans, La.; Dr. Wallace Wood, Jr. (L.S.D.S.), New Orleans, La.; Dr. L. D. Archinard (L.S.D.S.), New Orleans, La. *Hall, Exhibits and Arrangements Committee:* Dr. L. D. Archinard (L.S.D.S.), Chairman, New Orleans, La.; Dr. Joseph Bauer (S.B.N.D.A.), New Orleans, La.; Dr. Phil Friedrichs (L.S.D.S.), New Orleans, La.; Dr. Chas. Mermilliod (L.S.D.S.), New Orleans, La.; Dr. A. J. Foret (L.S.D.S.), New Orleans, La.

No. 2. Committee on Clinics: Dr. T. P. Hinman (S.B.N.D.A.), Chairman, Atlanta, Ga.; Dr. J. Rollo Knapp (S.B.N.D.A.), New Orleans, La. Dr. R. K. Luckie (S.B.N.D.A.), Holly Springs, Miss. *Committee on Clinics:*—La. State Dental Society, Dr. A. G. Friedrichs (L.S.D.S.), Chairman, New Orleans, La. Dr. J. F. Johnston (L.S.D.S), Ruston, La. Dr. L. D. Archinard (L.S.D.S.), New Orleans, La.

No. 3. Committee on Publication: Dr. Shep. W. Foster, (S.B.N.D.A.), Chairman, ex-officio, Atlanta, Ga. Dr. E. P. Beadles (S B.N.D.A.), Danville, Va. Dr. C. L. Alexander (S.B.N.D.A.), Charlotte, N. C.

No. 4. Committee on Oral Hygiene: Dr. L. M. Cowardin, Chairman, Richmond, Va.; Dr. S W. Foster, Atlanta, Ga.; Dr. J. Percy Corley, Greensboro, Ala.; Dr. I. Simpson, Rock Hill, S. C.; Dr. B. F. Arrington, Goldsboro, N. C.; Dr. J. N. Crouse, Chicago, Ill.; Dr. W. T. Arrington, Memphis, Tenn.: Dr. L. Augspath, Little Rock, Ark.; Dr. S. Dickson, Bolivar, Tenn.; Dr. E. F. Adair, Harmony Grove, Ga.; Dr. F. J. S. Gorgas, Baltimore, Md.

No. 5. Committee on Prosthetic Dentistry: Dr. J. A. Dale, Chairman,

Nashville, Tenn.; Dr. George Evans, New York, N.Y.; Dr. Ed Eggleston, Richmond, Va.; Dr. Albert B. King, Baltimore, Md.; Dr. W. H. Morgan, Nashville, Tenn.; Dr. J. G. Fife, Dallas, Texas; Dr. L. D. Carpenter, Atlanta, Ga.; Dr. W. H. Cook, Denton, Texas; Dr. J. L Wolf, Washington, D. C.; Dr. James S. Knapp, New Orleans, La.

No. 6. Committee on Orthodontia and Oral Surgery: Dr. George Hardy, Chairman, Baltimore, Md.; Dr. L. M. Cowardin, Richmond, Va.; Dr. A. R. Melendy, Knoxville, Tenn.; Dr. J. E. Orrison, Baltimore, Md.; Dr. W. W. Corley, Talladega, Ala.; Dr. H Marshall. Atlanta, Ga.; Dr. Jules J. Sarrazin, New Orleans; Dr. E. P. Keerans, Charlotte, N. C.; Dr. R. C. Young, Anniston, Ala.; Dr. F. L. Wood, Roanoke, Va.; Dr. Wm. J. Younger, Chicago, Ill.

No. 7. Committee on Operative Dentistry: Dr. J. G. Fife, Chairman, Dallas, Texas; Dr. A. P. Johnston, Anderson, S. C.; Dr. J. Edwin Boozer, Baltimore, Md.: Dr. J. E. Orrison, Baltimore, Md.; Dr. B. Holly Smith, Baltimore, Md.; Dr. H. D. Boyd, Troy, Ala.; Dr. E. L. Hunter, Fayetteville, N. C.; Dr. L. A. Smith, Port Gibson, Miss.; Dr. Sam Rambo, Montgomery, Ala.; Dr. C. Sill, New York, N.Y.; Dr. J. M. Quattlebaum, Columbia, S. C.; Dr. W. H. Burr, Madison, Ga.

No. 8. Committee on Chemistry, Metallurgy and Anatomy: Dr. Albert B. King, Chairman, Baltimore, Md.; Dr. J. H. Benton, New Berne, S. C.; Dr. M. C. Marshall, St. Louis, Mo.; Dr. B. H. Teague, Aiken, S. C.; Dr. Chas, S. Grindall, Baltimore, Md.; Dr. B. J. Quattlebaum, Winnsboro, S. C.; Dr. W. H. Ewald, Portsmouth, Va.

No. 9. Committee on Pathology, Materia Medica and Therapeutics: Dr. H. H. Johnson, Chairman, Macon, Ga.; Dr. H. A. Parr, New York, N. Y.; Dr. R. H. Jones, Selma, N. C.; Dr. E. B. Marshall, Rome, Ga.; Dr. J. T. Calvert, Spartansburg, S. C.; Dr. R. K. Luckie, Holly Springs, Miss.; Dr. J. W. Smith, Baltimore, Md.; Dr. F. Y. Clark, Saratoga, N. Y.; Dr. F. L. Wood, Roanoke, Va.; Dr. W. T. Coles, Newman, Ga.

No. 10. Committee on Microscopy, Histology and Bacteriology: Dr. W. T. Martin, Chairman, Yazoo City, Miss.; Dr. H. A. Lowrence, Athens, Ga.; Dr. S. J. Cockerill, Washington, D.C.; Dr. S. G. Holland, Atlanta, Ga.; Dr. F. C. Wilson, Savannah, Ga.; Dr. V. E. Turner, Raleigh: N. C.; Dr. W. R. Clifton, Waco, Texas; Dr. B. Rutledge, Florence, S. C.; Dr. C. T. Brockett, Atlanta, Ga.; Dr. T. P. Hinman, Atlanta, Ga.; Dr. W. H. Ewald, Portsmouth, Va.; Dr. J. A. Tigner, Rome, Ga.

No. 11. Committee on Appliances and Improvements: Dr. T. M. Allen, Chairman, Birmingham, Ala.; Dr. F. H. McAnnally, Jasper, Ala.; Dr. D. E Everitt, Raleigh, N. C.; Dr. W. H. H. Thackston, Farmville, Va.; Dr. J. P. H. Brown, Augusta, Ga.; Dr. J. E. Orrison, Baltimore, Md.; Dr. J. Rollo Knapp, New Orleans, La.; Dr. Ed D. Frost, Elizabeth, N. J.; Dr. Louis Dotterer, Charleston, S. C.

No. 12. Committee on Education, Literature and Voluntary and Special Essays: Dr. T. P. Whitby, Chairman, Selma, Ala.; Dr. R. D. Seals, Ft. Smith, Ark.; Dr. J. A. Harris, Baltimore, Md.; Dr. J. A. Hall, Collinsville, Ala.; Dr. J. A. Chapple, Atlanta, Ga.; Dr. H. W. Morgan, Nashville, Tenn.;

Dr. B. B. Brabson, Knoxville, Tenn.; Dr. R. A. McDonald, Griffin, Ga.; Dr. E. C. Kirk, Philadelphia, Pa.

Entertainment Committee: Dr. Joseph Bauer (L.S.D.S.), Chairman, New Orleans, La.; Dr. J. Rollo Knapp (L.S.D.S.), New Orleans, La.; Dr. C. V. Vignes (L.S.D.S.), New Orleans, La.; Dr. E. J. Zeidler (L.S.D.S.), New Orleans, La.

Carnival Balls Invitation Committee: Dr. J. Rollo Knapp (S.B.N.D.A.), Chairman, New Orleans, La.; Dr. Joseph Bauer (S.B.N.D.A.), New Orleans, La.; Dr. Wallace Wood, Jr. (L.S.D.S.), New Orleans, La.; Dr. L. D. Archinard (L.S.D.S.), New Orleans, La.; Dr. E. Telle (L.S.D.S.), New Orleans, La.; Dr. V. K. Irion (L.S.D.S.), New Orleans, La. C. L. ALEXANDER,

Cor.-Sec'y Southern Branch National Dental Association, Charlotte, N. C.

News Summary.

CARBOLIC ACID will prove superior to all other caustics in destroying abscess sacs.—*Dental Weekly.*

CASTOR OIL can be made more fluid by warming and more pleasant to the taste by adding sugar or an equal quantity of syrup of manna.—*Teixeira.*

WAY TO KILL MOSQUITOES.—Two and one-half hours are required for a mosquito to develop from its first stage, a speck resembling cholera bacteria, to its active and venomous maturity. The insect in all its phases may be instantly killed by contact with minute quantities of permanganate of potassium. It is claimed that one part of this substance in fifteen hundred of solution distributed in mosquito marshes will render the development of larvæ impossible; that a handful of permanganate will oxidize a ten-acre swamp, kill its embryo insects and keep it free from organic matter for thirty days at a cost of 25 cents; that with care a whole state may be kept free of insect pests at a small cost. An efficacious method is to scatter a few crystals widely apart. A single pinch of permanganate has killed all the germs in a thousand-gallon tank.—*The Public Health Journal.*

PRESERVATION OF ETHER.—The loss caused by the evaporation of ether from unsealed bottles during hot weather, and in shops that are kept very warm in winter, can be prevented by the following ingenious plan: Fill the bottle nearly full with ether, pour in sufficient glycerin to bring the surface of the ether nearly to the bottom of the stopper; then insert the latter carefully, and with a piece of twine of sufficient length suspend the bottle neck downward from a nail or other support, letting the cord pass over the stopper and take a turn around the body of the bottle from each side, so that it will hang perpendicularly and safely. The glycerin descends and fills the neck of the bottle, sealing the latter hermetically, and when any of the contents are required for use it is necessary only to reinvert the bottle, remove the stopper, and carefully wipe the neck before pouring. The glycerin of course drops to the bottom, and allows the ether to be poured out almost to the last drop if care be taken. A similar plan is useful for bottles containing benzol. —*National Druggist*, xxvii, 210.

COATING OF THE TONGUE.—(1) In severe infectious diseases the tongue is coated with a brownish fur, which consists partly of the remains of food and partly of dried blood. The microscopical examination of the coating removed from the tongue exhibits in such cases a profusion of epithelial cells and hosts of fungi of various forms. In addition to these there is a multitude of dark cellular bodies, derived doubtless from the corneous and exfoliated epithelium of the part (Bizzero). Schech again calls attention to the occurrence of a black fur, which is probably occasioned by the formation of pigment papillæ on the tongue. Ciaglinski and Hewelke trace an appearance similar to that of a pigment-forming yeast fungus. (2) The tongue of infants is normally coated with a white fur, and a similar appearance is found in adults when the stomach is deranged. Microscopical examination shows epithelium, a few salivary corpuscles and very few fungi.—*Dr. Rudolf v. Jaksch "Clinical Diagnosis."*

GELATINE AS A COAGULANT.—The action of a solution of gelatine as a coagulant of blood was discovered by Dastre and Floresco (Societe de Biologie, February, 1896), and the application of this discovery to surgery is due to Carnot. Carnot dissolves the gelatine in normal salt solution (7 per cent solution of Na. Cl. in water), using two strengths, a 5-per-cent solution for ordinary cases and a 10-per-cent one for hemophiles, or very weakly patients. To sterilize these solutions they should be kept at boiling point for a quarter of an hour on two separate occasions at an interval of two days. Dr. Frey, writing in *l'Odontologie*, advises placing this gelatine mixture to melt over a sand-bath during the earlier stages of the operation, and then to moisten a piece of lint in it and place it upon the wound. If there be a hemorrhagic tendency the lint, dipped in the stronger solution, is left in the wound for about six hours, otherwise it is removed in a few minutes. When many teeth are extracted under an anesthetic Dr. Frey states that this procedure is advisable, as it prevents blood being swallowed and so much of the subsequent nausea.

LOSS OF VITALITY IN METALS.—It is a fact of comparatively recent discovery in chemical metallurgy that metals lose their vitality from repetition of shocks and strains, and may be said, as the expression is, to suffer from fatigue —that is, they may be worked till their molecules fail to hold together, and then they are in a state of exhaustion. As is familiarly known, bars of tin, rods of brass, and wires of any metal will separate, owing to fatigue, if bent backward and forward continuously. By careful experiments, however, the fact is made to appear that a remedy exists for this condition of metals if the overstrain does not border on rupture, and this remedy is very much like that which is applied in the case of an overworked human frame, namely, rest. Feather-edged tools recover their vitality better than any others. Of course, the length of time required for this rest varies with different metals and the amount of strain to which they have been subjected. Hard metals, such as iron and steel, use up one and two years' time in the process; on the other hand, soft metals, like lead, retain their cohesive force longer and also require less rest.—*New York Sun.*

LONGEVITY OF GERMS IN DUST.—In a recent number of the *Annales de Michrographie*, Dr. Miguel gives the results of some interesting observations made by him in respect to the vitality of disease germs. In May, 1881, he took some earth from the Montsouris Park, at a depth of ten inches below the turf. This he dried for two days at a temperature of 30 deg. C., and then he placed the dust in hermetically sealed tubes which he put aside in a dark corner of the laboratory. When taken the soil contained an average of six and one-half million bacteria per gram. After desiccation the number had fallen to rather less than four million. Sixteen years later—that is to say, last year—he still found three and one-half million per gram, and he was enabled to isolate the specific microbe of tetanus. The inoculation of this soil in guinea-pigs determined death from tetanus after an incubation period of two days, showing the remarkable vitality of pathogenic microbes under favorable conditions.—*Medical Press.*

TOOTH IN THE INFERIOR TURBINATED BONE.—Dr. G. W. Graham relates the following case: One night about eighteen months before, while playing in the moonlight with her companions, a child ran against a projecting hinge and knocked out one of her front teeth, and otherwise injured her mouth, which bled profusely. A physician had checked the hemorrhage, and in a few days the wound had healed, minus the tooth, which was never found, although diligent search was made for it the next morning. An examination of the nose with head-mirror showed one nostril to be in a normal condition, while the other was filled with a polypoid growth, beneath which there constantly oozed a watery liquid in such quantity as to require constant use of the handkerchief. After removing the excrescence in the usual way the tooth which had so mysteriously disappeared was discovered firmly imbedded in the inferior turbinated bone. The girl had struck the hinge with such force as to drive the tooth entirely through the superior maxilla and bury it in the bone, and so thoroughly had it united with the parts that it was impossible to remove it with forceps without doing further injury to the nose. It was at length loosened by means of the dental engine.—*Brit. Jour. Dent. Sc.*

NEW SPLINT FOR FRACTURES OF NASAL BONES.—A No. 15 spring brass wire is bent into the form of a rectangular letter U, the arms of which are about one inch apart and long enough to extend from the upper lip to the crown of the head or beyond. Opposite the supraorbital ridge a sharp angle is formed which enables the splint to enter the orbital cavity just below the orbital ridge; this angle fixes the splint against the supra-orbital ridge. The lower or transverse portion is carried forward away from the lip, for a distance of half an inch. Compresses placed between the splint and the side of the nose will correct deviations. If needed, a silk suture may be passed through the septum of the nose and tied to the transverse portion of the splint. For drawing down and firmly holding the point of the nose or its alæ this is the best appliance. If one wishes, he can add to the intranasal splint an intranasal wire, which should be covered with soft-rubber tubing. The splint is held in position by means of a strip of rubber adhesive plaster passing over

the forehead and around the back of the head, like a hatband. The advantages of the splint are that it is simple, easily made and applied and permits inspection of the nose without removing the apparatus.—*Hawes.*

USE AND ABUSE OF THE BRAIN.—In the course of an address on this subject, Dr. William A. Hammond recently said: "Anxiety causes more brain disorders than any other agency I know of unless it be love. Many jokes are made about the gray matter of the brain, but I will say, right here, that I have a great respect for the gray matter of the brain. There is no higher organism than that. It is the grandest organ in man, and were I ever to worship anything, it would be a portion of the gray matter of the brain. It is well for us to know that the emotions cause more unhappiness and crime than any other function of the brain. Human beings are governed by their emotions, and it is well that they should be, though it is the emotions that wear away the brain, and not honest, intellectual work. Very few people suffer from intellectual work, and if my memory serves me I do not recollect ever having a mathematician for a patient. It is not intellectual work that causes nervous dyspepsia, but the emotions, such as anxiety, fear, sorrow and love. I consider that eight hours are sufficient for a man to use his brain, because if he exceeds that time he becomes nervous and fretful, and an exhausted brain is an irritable brain. You may not feel the evil effects of the stress of brain work at the time, but you will sooner or later, when it is too late. The men that work at night with their brains are the ones that expose themselves to danger and death, which will surely come unless the great strain on the mind is lightened."

THEORY OF THE ORIGIN OF ATMOSPHERIC OXYGEN.—T. L. Phipson, who has communicated several papers on the origin of atmospheric oxygen, is of opinion that the earth's atmosphere originally consisted of nitrogen only, and that the carbon dioxid in the air, water and earth was subsequently furnished by the action of volcanoes. In this atmosphere of nitrogen, carbon dioxid and water the primitive plants thrived, being essentially anaerobic, and free oxygen was the product of their activity in decomposing the carbon dioxid. The conclusions finally arrived at by the author of this theory are: (1) That in the earliest periods, as at present, nitrogen constituted the major portion of the earth's atmosphere; (2) that the presence of free oxygen in the atmosphere is entirely due to the action of vegetation; (3) that existing plants, like their primitive progenitors, are essentially anaerobic; (4) that the proportion of free oxygen in the air has been gradually augmented in the course of ages, the anaerobic organisms meanwhile adapting themselves at first to a more or less aerobic state of existence, as in the case of fungi, ferments, bacteria, etc., and later completely aerobic (animal) forms have appeared; (5) that even now the lowest unicellular algæ give out, weight for weight, more oxygen than the superior plants; and (9) that, in proportion as the relative quantity of oxygen in the air has been augmented in the course of ages the cerebro-spinal nervous system, the highest characteristic of animal life, has become more and more developed, this fact being clearly demonstrated by the results of palæontological researches.